CMT-VB5

SERVICE MANUAL

E Model

- CMT-VB5 is composed of following models.
  As for the service manual, it is issued for each component model, then, please refer to them.

COMPONENT MODEL NAME

	CMT-VB5
COMPACT DISC DECK RECEIVER SYSTEM	HCD-VB5
SPEAKER SYSTEM	SS-CVB5

SPECIFICATIONS

General

Power requirements	110-120 V or 220-240V AC, 50/60 Hz Adjustable with voltage selector.
Power consumption	50 watts
Dimensions (w/h/d)	Approx. 180 x 130 x 315 mm incl. projecting parts and controls
Mass	Approx. 4.0 kg

Supplied accessories

Remote (1)
Size AA (R6) batteries (2)
AM loop antenna (1)
FM lead antenna (1)
Speaker cords (2)
Video cors (1)

Design and specifications are subject to change without notice.

PARTS LIST

Part No.	Description	Remark
	ACCESSORIES & PACKING MATERIALS **********	
1-476-157-11	COMMANDER,STANDARD (RM-SVB5)	
1-501-374-11	ANTENNA, LOOP (AM)	
1-501-659-41	ANTENNA (FM)	
1-751-619-11	CORD, CONNECTION	
4-231-288-11	MANUAL,INSTRUCTION (ENGLISH)	
4-231-288-21	MANUAL, INSTRUCTION (FRENCH, SPANISH)	
4-231-288-31	MANUAL, INSTRUCTION (CHINESE)	
4-981-643-41	COVER,BATTERY (FOR RM-SVB5)	

MICRO Hi-Fi COMPONENT SYSTEM

SONY®

9-929-550-11

Sony Corporation
Audio Entertainment Group

2000J16037-1D
Printed in Japan ©2000.10
Published by General Enginnering Dept.

HCD-VB5

SERVICE MANUAL

E Model

- This set is the Amplifier and VIDEO CD/ CD player section in CMT-VB5.

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM55C-K6BD37A
Base Unit Name	BU-K6BD37A
Optical Pick-up Name	KSM-213DCP/Z-NP

SPECIFICATIONS

Main Unit

Amplifier section

The following measured at 220 V AC, 50/60 Hz

DIN power output (rated): 10 + 10 watts
(4 ohms at 1 kHz, DIN)

Continuous RMS power output (reference):
12 + 12 watts
(4 ohms at 1 kHz, 10% THD)

The following measured at 240 V AC, 50/60 Hz

DIN power output (rated): 12 + 12 watts
(4 ohms at 1 kHz, DIN)

Continuous RMS power output (reference):
15 + 15 watts
(4 ohms at 1 kHz, 10% THD)

Inputs

MD/VIDEO (AUDIO) IN (phono jacks):
voltage 500/250 mV, impedance 47 kilohms

MIC (mini jack): Sensitivity 1 mV, impedance 10 kilohms

Outputs

MD/VIDEO (AUDIO) OUT (phono jack):
voltage 250 mV, impedance 1 kilohm

VIDEO OUT (phono jack):
max. output level 1 Vp-p, unbalanced, Sync negative, load impedance 75 ohms

S VIDEO OUT (4-pin/mini-DIN jack):
Y: 1 Vp-p, unbalanced, Sync negative,
C: 0.286 Vp-p, load impedance 75 ohms

PHONES (stereo minijack):
accepts headphones of 8 ohms or more.

SPEAKER: accepts impedance of 4 to 16 ohms.

CD DIGITAL OUT OPTICAL:
Optical

VIDEO CD/CD player section

System	Compact disc and digital audio and video system
Laser	Semiconductor laser (= 780 nm) Emission duration: continuous
Laser output	Max. 44.6 *m*W* * This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.
Wavelength	780 – 790 nm
Frequency response	2 Hz – 20 kHz (0.5 dB)
Signal-to-noise ratio	More than 90 dB
Dynamic range	More than 90 dB
Video color system format	NTSC, PAL

CD DIGITAL OUT OPTICAL
(Square optical connector jack, rear panel)

Wavelength	666 nm
Output Level	–18 dBm

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range	87.5 – 108.0 MHz (50 kHz step)
Antenna	FM lead antenna
Antenna terminals	75 ohms unbalanced
Intermediate frequency	10.7 MHz

AM tuner section

Tuning range	531 – 1,602 kHz (with the interval set at 9 kHz) 530 – 1,710 kHz (with the interval set at 10 kHz)
Antenna	AM loop antenna External antenna terminals
Intermediate frequency	450 kHz

General

Power requirements	110 – 120 V or 220 – 240 V AC, 50/60 Hz Adjustable with voltage selector
Power consumption	50 watts
Dimensions (w/h/d)	Approx. 180 130 315 mm incl. projecting parts and controls
Mass	Approx. 4.0 kg
Supplied accessories	Remote (1) Size AA (R6) batteries (2) AM loop antenna (1) FM lead antenna (1) Speaker cords (2) Video cord (1)

Design and specifications are subject to change without notice.

MICRO Hi-Fi COMPONENT SYSTEM

SONY®

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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

Notes on chip component replacement

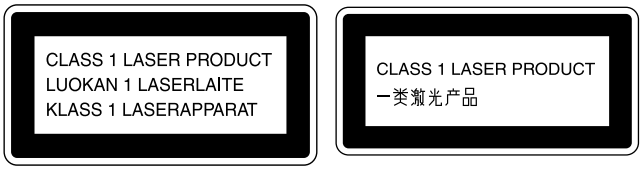
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

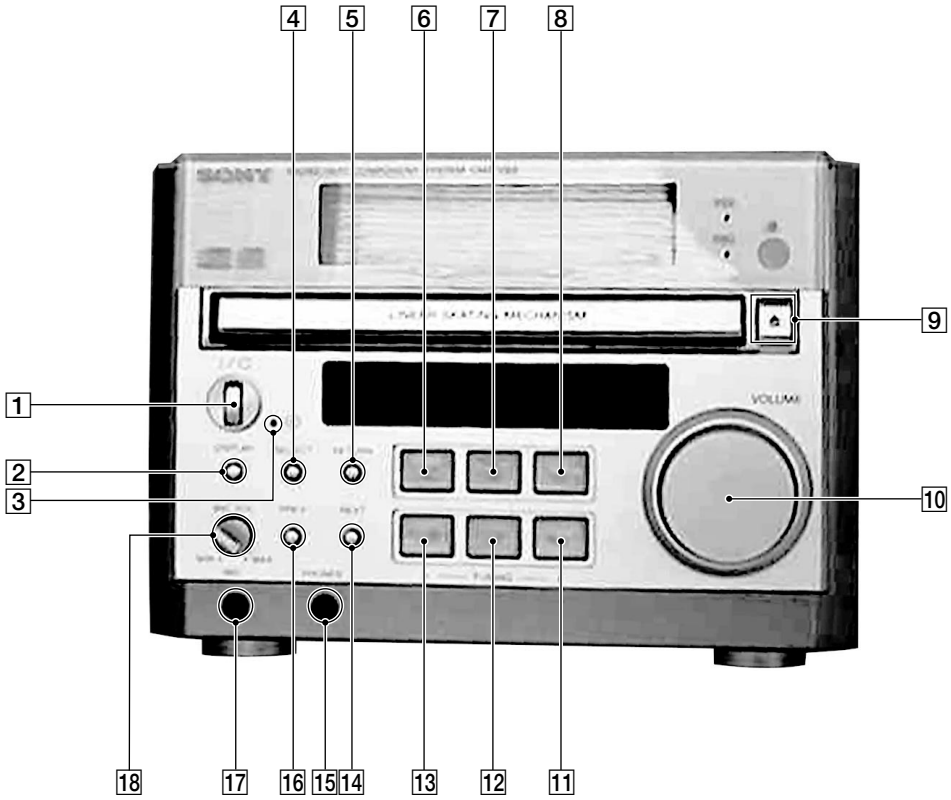
This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.



Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

SECTION 1
GENERAL

LOCATION OF CONTROLS
– Front Panel –

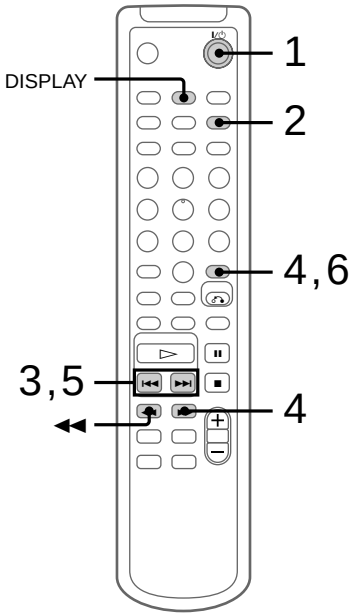


1 I/⏻ button
2 DISPLAY button
3 ◴ indicator
4 SELECT button
5 RETURN button
6 TUNER/BAND button
7 ▷II button
8 FUNCTION button
9 ⏏ button
10 VOLUME knob
11 ▷▷ ▷▷I button
12 □ button
13 I◁◁ ◁◁ button
14 NEXT button
15 PHONES jack
16 PREV button
17 MIC jack
18 MIC VOL knob

This section is extracted from instruction manual.

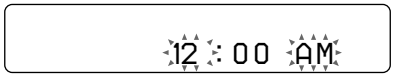
Step 2: Setting the time

You must set the time beforehand to use the timer functions.



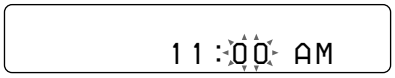
1 Turn on the system.

2 Press CLOCK/TIMER SET.
The clock appears and the hour indication flashes.



3 Press ⏮/⏭ to set the hour.

4 Press ENTER or ⏩.
The minute indication flashes.



5 Press ⏮/⏭ to set the minute.

6 Press ENTER.
The clock starts.

If you made a mistake

Press ⏪/⏩ repeatedly until the incorrect item flashes, then set it again.

To change the preset time

You can change the preset time while the system is off.

1 Press DISPLAY to display the clock.
2 Press CLOCK/TIMER SET.
3 Repeat steps 3 to 6 of “Setting the time.”

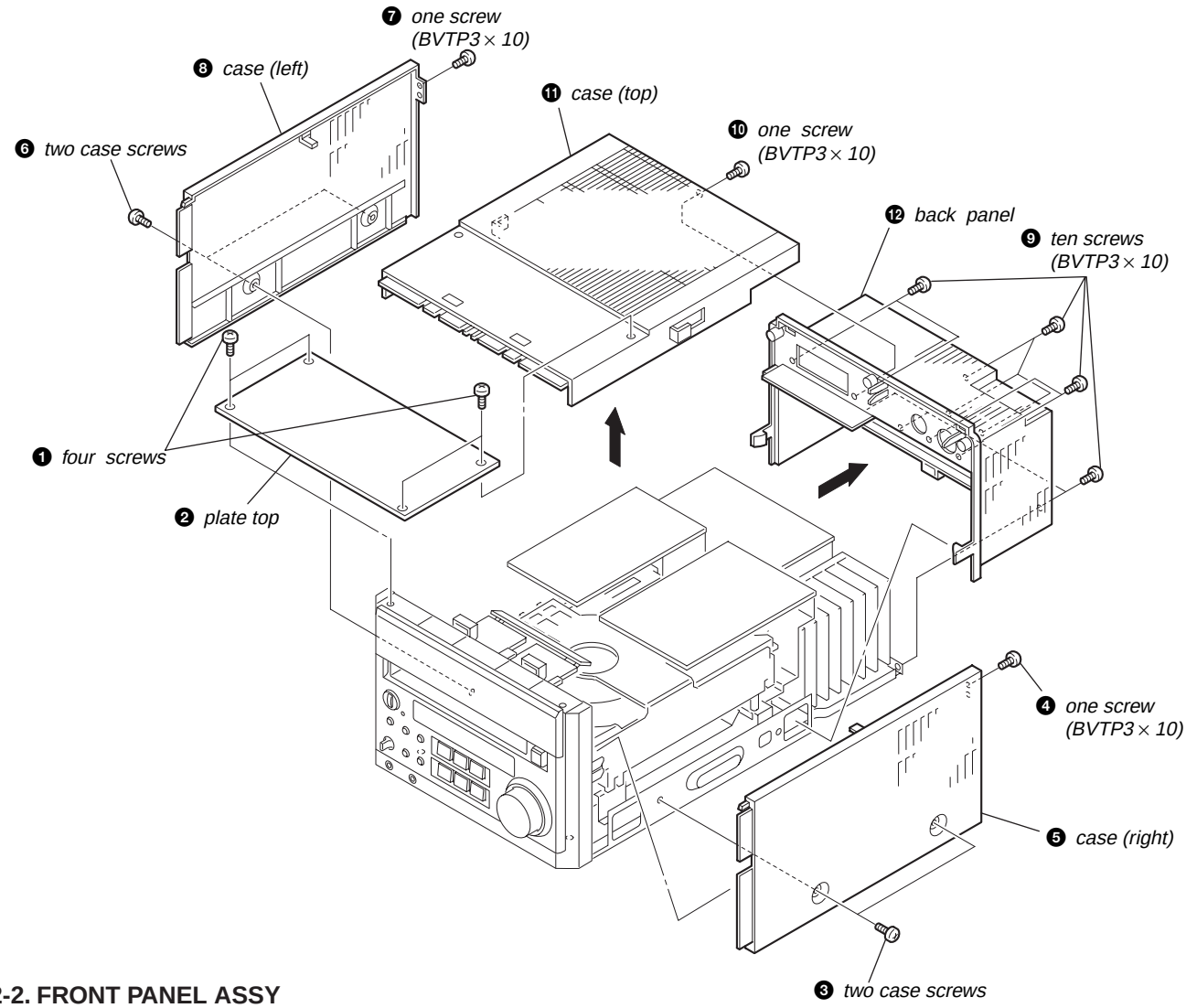
Tips

- The upper dot of the colon flashes for the first 30 seconds, and the lower dot flashes for the last 30 seconds of each minute.
- Each time you press DISPLAY while the system is off, the display switches between no display and the clock display.

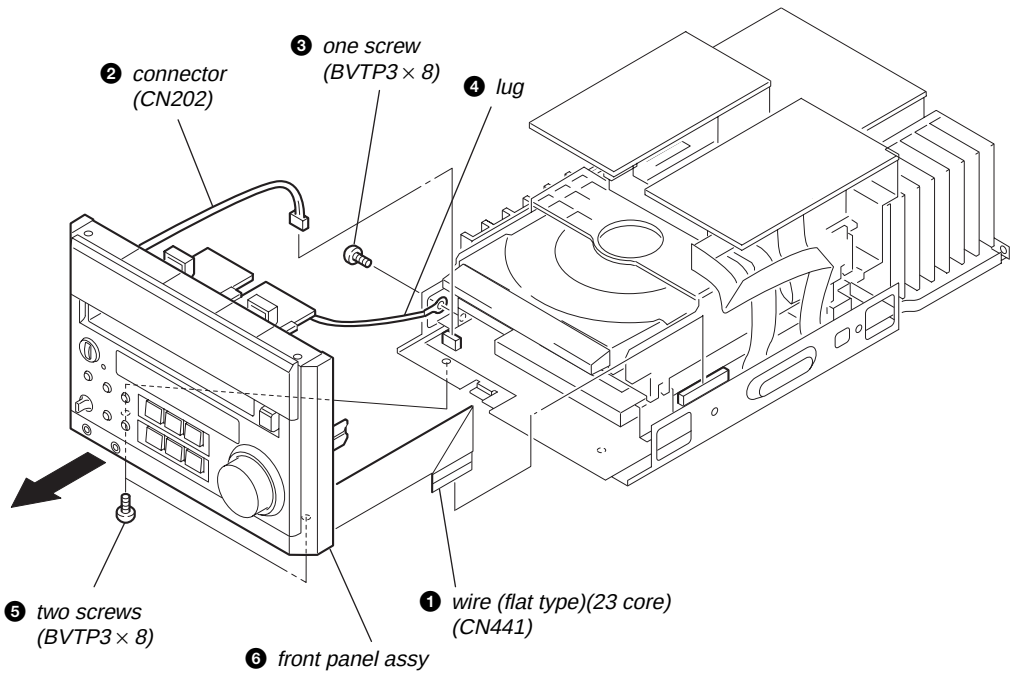
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

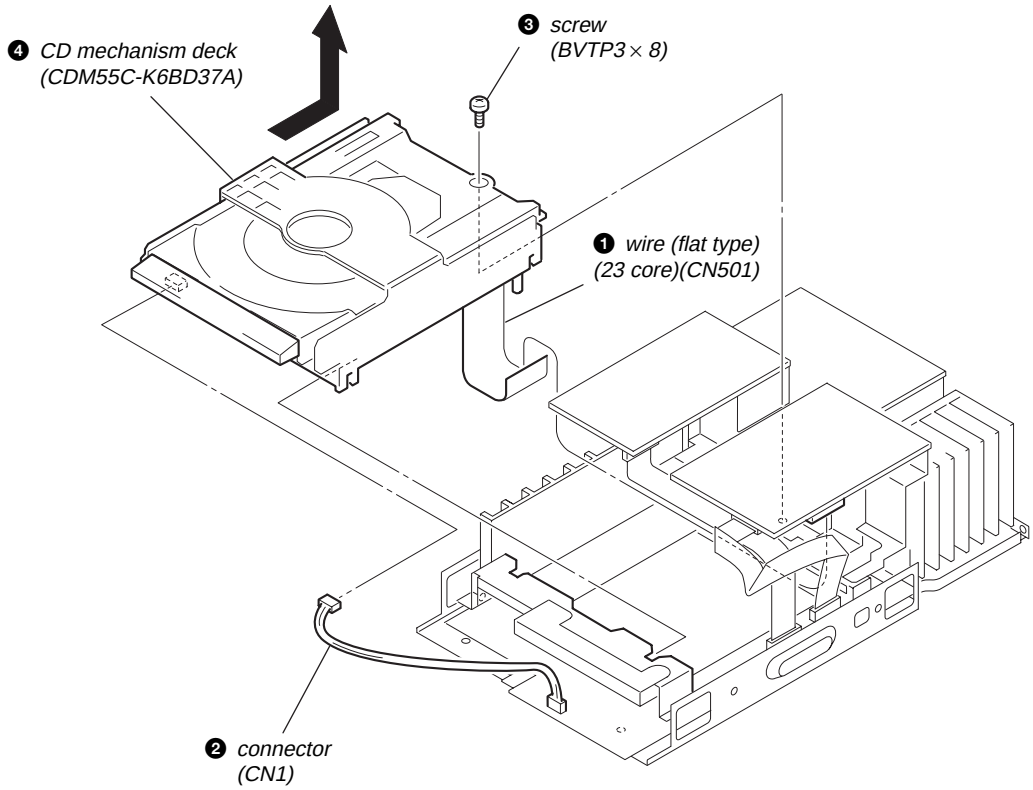
2-1. CASE (TOP)


❼ one screw (BVTP3 × 10)
❽ case (left)
❻ two case screws
⓫ case (top)
❿ one screw (BVTP3 × 10)
⓬ back panel
❾ ten screws (BVTP3 × 10)
❶ four screws
❷ plate top
❹ one screw (BVTP3 × 10)
❺ case (right)
❸ two case screws

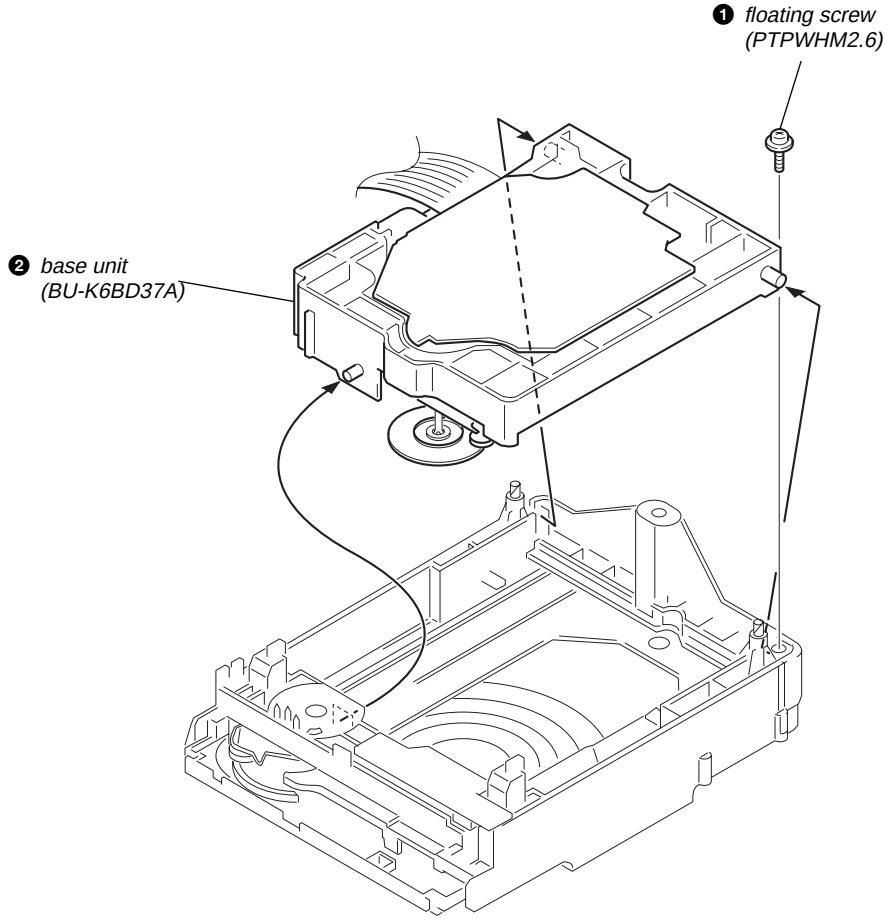
2-2. FRONT PANEL ASSY



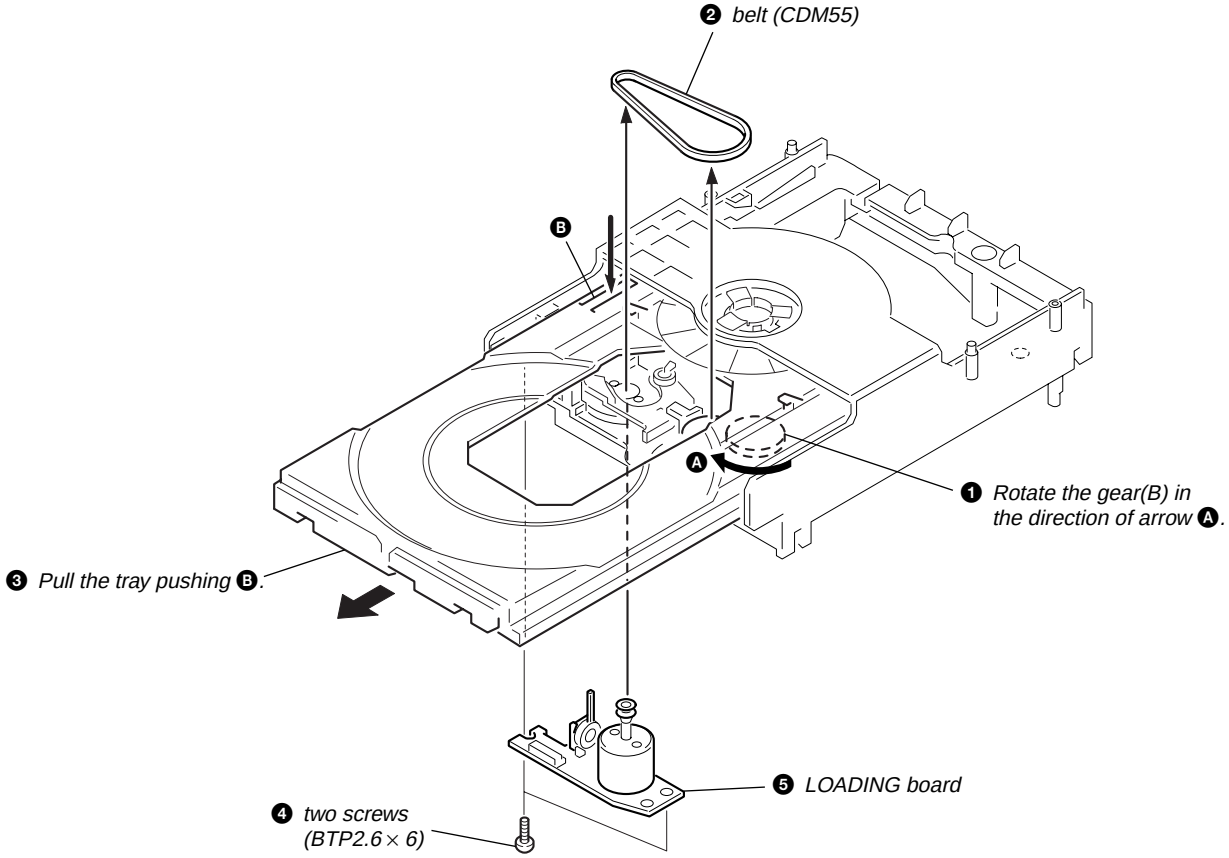
2-3. CD MECHANISM DECK (CDM55C-K6BD37A)



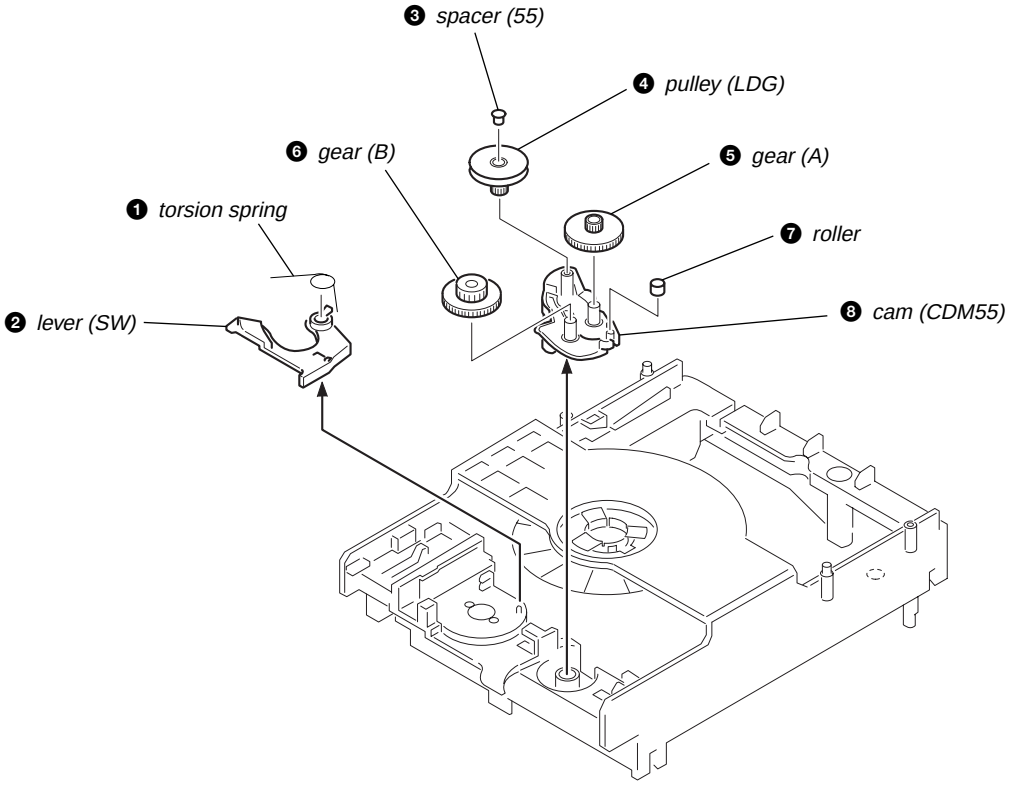
2-4. BASE UNIT (BU-K6BD37A)



2-5. LOADING BOARD



2-6. CAM (CDM55C-K6BD37A)



SECTION 3
SERVICE MODE

[Panel Test Mode]

Procedure:

1. Set to standby state.
2. Press three buttons of □ , I/⏻ , and ▷II simultaneously.
3. Liquid crystal display and LED are all turned on.
4. Pless ⏏ to enter the version display mode.
5. Press ▷II to enter the KEY, VOL, check mode. (⏮ ◁◁ and ▷▷ ▷▷⏭ must be pressed for several seconds.)
6. To exit from this mode, press the buttons in the same way as step 2.

[Cold Reset]

Clears all the memories and starts up the machine again.

Procedure:

1. Set to standby state.
2. Press three buttons of □ , I/⏻ , and FUNCTION simultaneously.

[Hot Reset]

Starts up the machine again holding the memory data.

Procedure:

1. Set to standby state.
2. Press three buttons of □ , I/⏻ , and ▷II simultaneously.

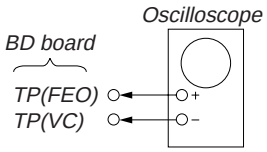
SECTION 4
ELECTRICAL ADJUSTMENTS

CD SECTION

Note :

1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

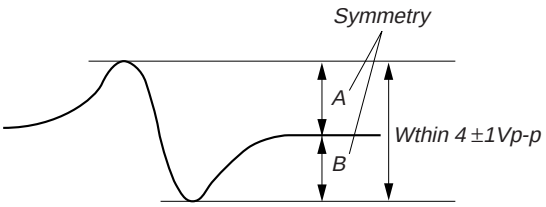
S-Curve Check



Procedure :

1. Connect oscilloscope to TP (FEO).
2. Connect between TP (FEI) and TP (VC) by lead wire.
3. Connect between TP (AGCCON) and TP (GND) by lead wire.
4. Turn I/⏻ button on.
5. Load a disc (YEDS-18) and actuate the focus search. (In consequence of open and close the disc tray, actuate the focus search)
6. Confirm that the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 4 ±1 Vp-p.

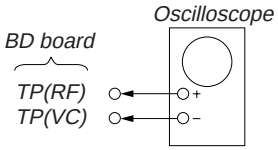
S-curve waveform



7. After check, remove the lead wire connected in step 2 and 3.

Note : • Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

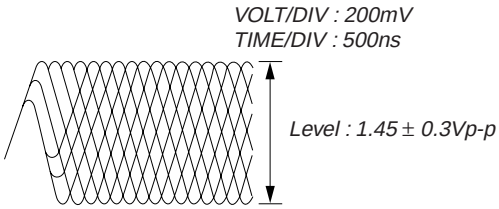


Procedure :

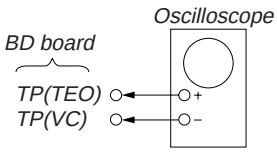
1. Connect oscilloscope to TP (RF).
2. Connect between TP (AGCCON) and TP (GND) by lead wire.
3. Turned I/⏻ button on.
4. Load a disc (YEDS-18) and playback.
5. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.
6. After check, remove the lead wire connected in step 2.

Note : Clear RF signal waveform means that the shape " ◊ " can be clearly distinguished at the center of the waveform.

RF signal waveform



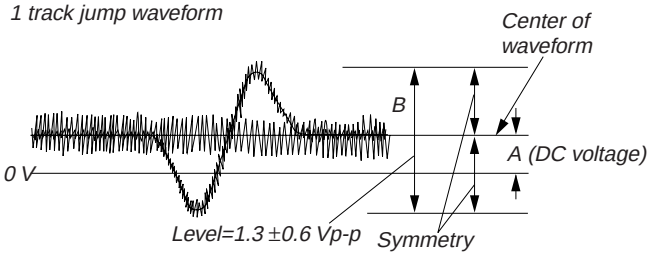
E-F Balance (1 Track jump) Check



Procedure :

1. Connect oscilloscope to TP (TEO) and TP (VC).
2. Turned I/⏻ button on.
3. Load a disc (YEDS-18) and playback the number five track.
4. Press the ▷II button. (Becomes the 1 track jump mode.)
5. Confirm that the level B and A (DC voltage) on the oscilloscope waveform.

1 track jump waveform

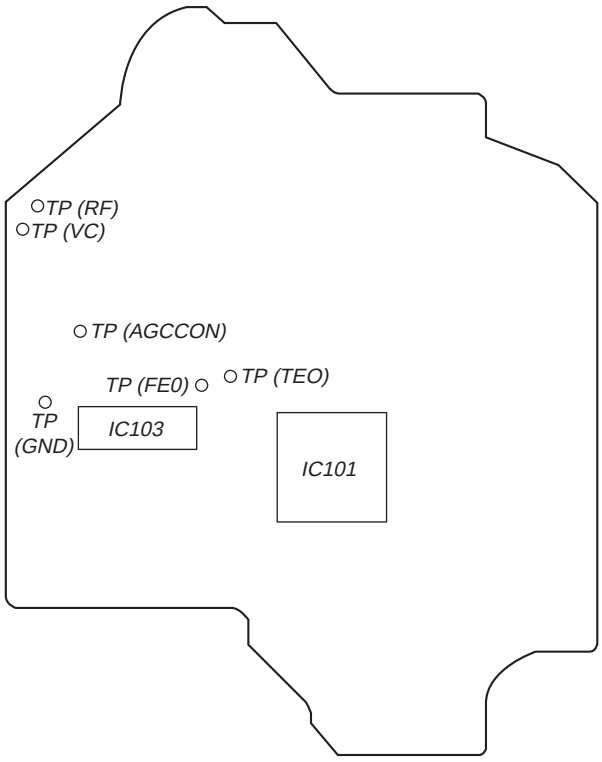


Specified level: $\frac{A}{B} \times 100$ = less than ± 22 %

6. After check, remove the lead wire connected in step 1.

Adjustment Location:

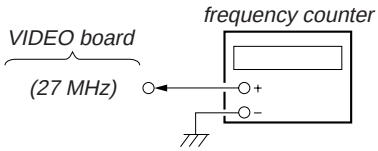
[BD BOARD] (Conductor Side)



VIDEO SECTION

Frequency Adjustment

Connection:

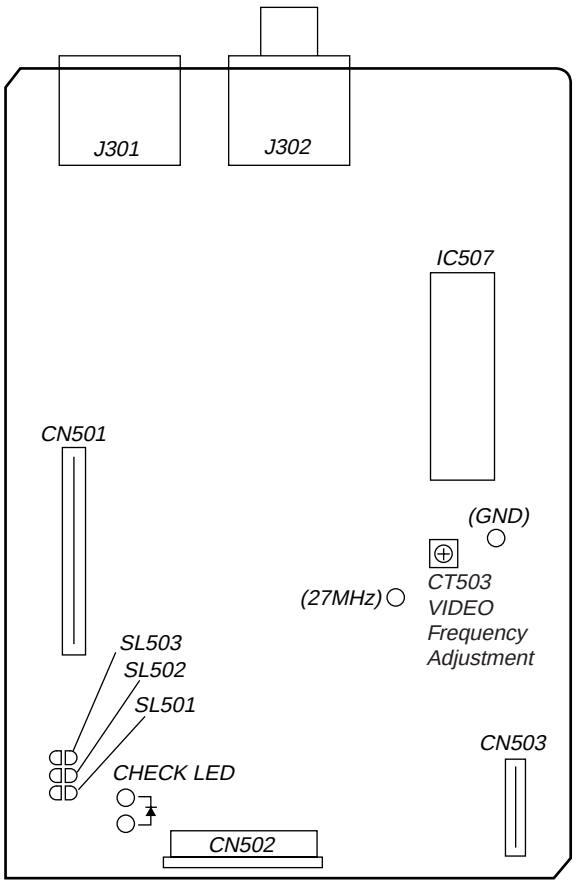


Procedure:

1. Connect the frequency counter to check point of the VIDEO board.
2. Turned I/⏻ button switch on.
3. Press the FUNCTION button to select the CD.
4. Adjust CT503 on the VIDEO board so that the frequency counter reading 27.0 MHz ± 80 Hz at stop status.

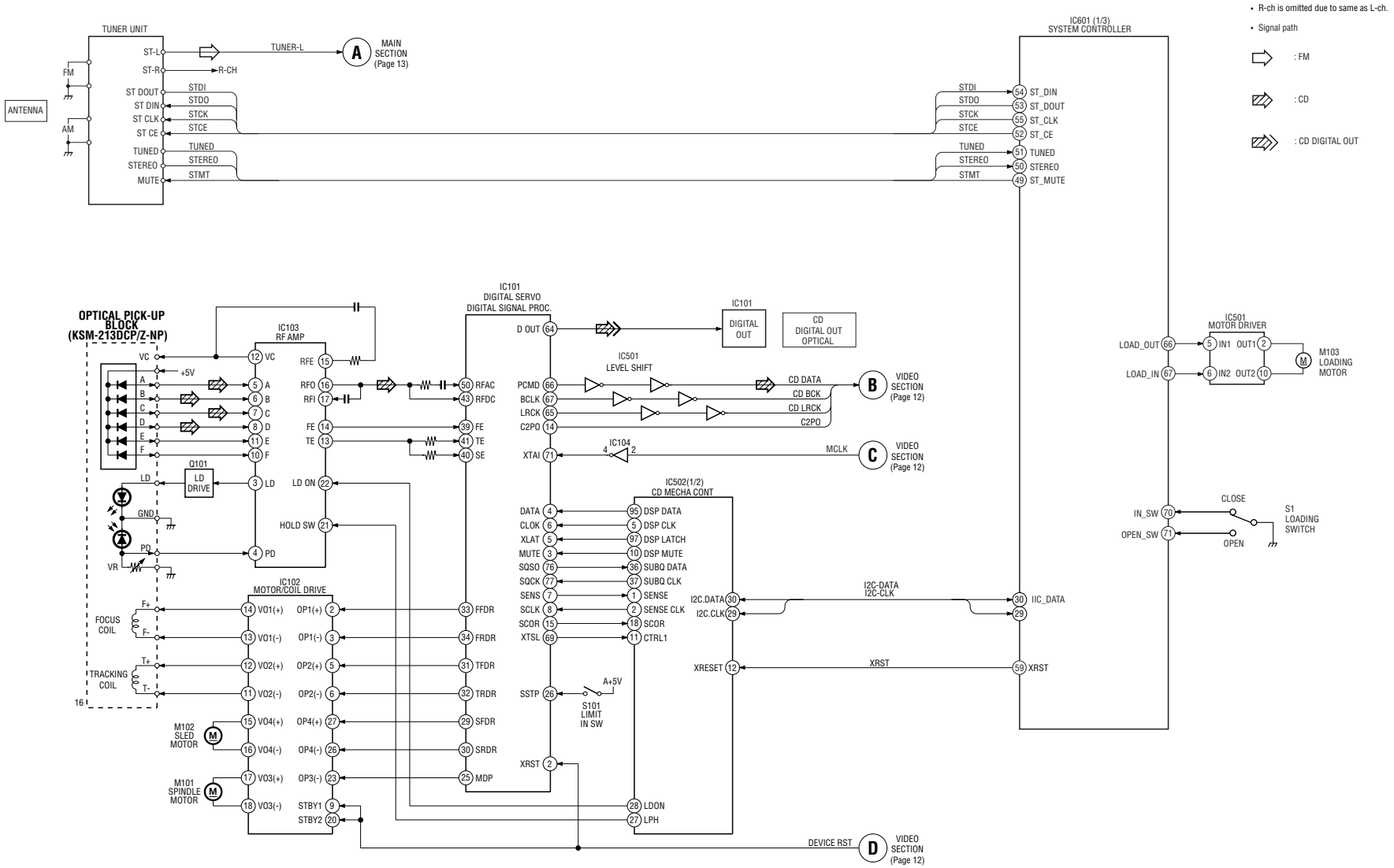
Adjustment Location:

[VIDEO BOARD] (SIDE A)

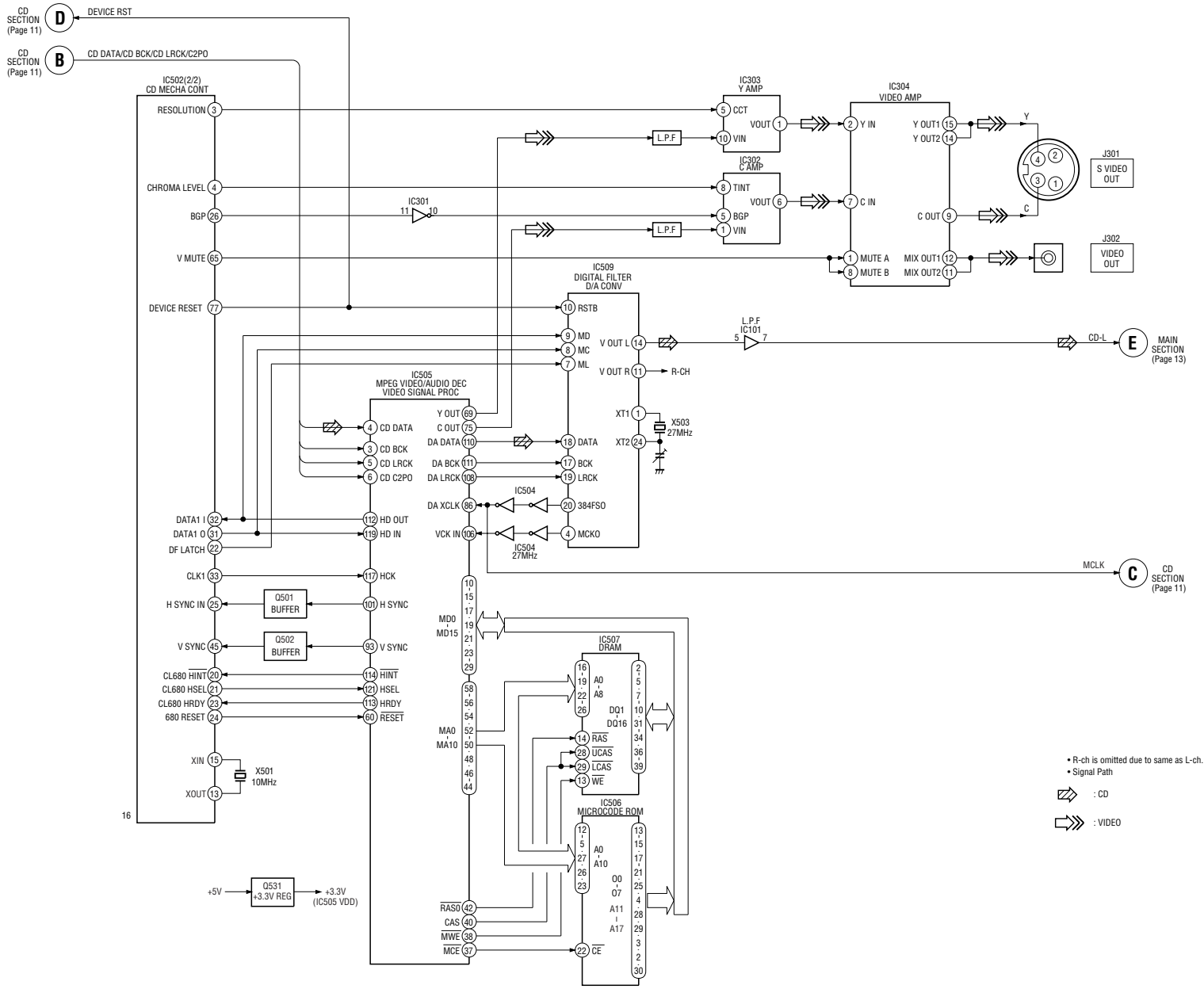


SECTION 5
DIAGRAMS

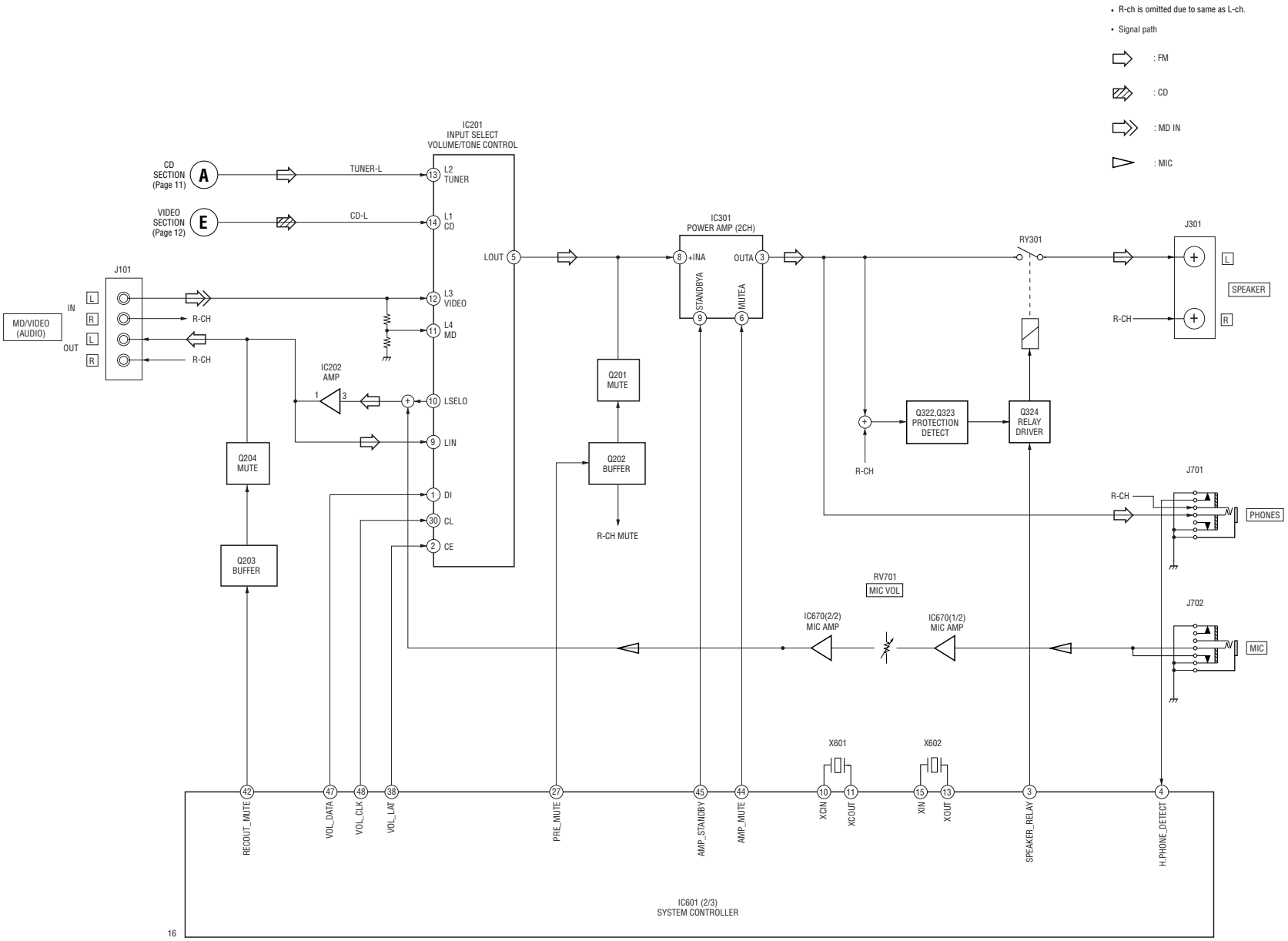
5-1. BLOCK DIAGRAM – CD SECTION –



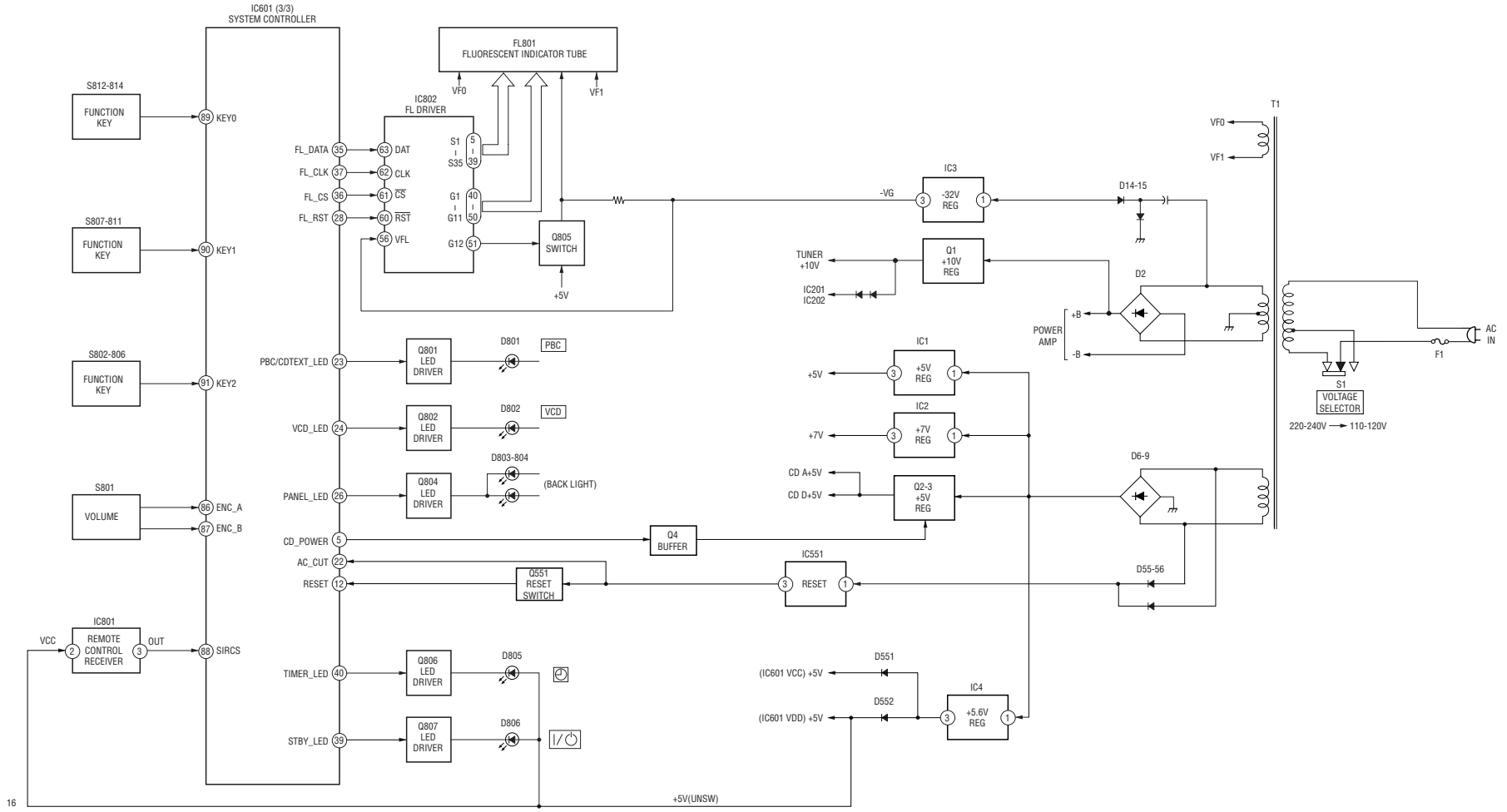
– VIDEO SECTION –



– MAIN SECTION –



– PANEL/POWER SECTION –



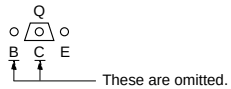
NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

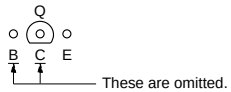
Note on Printed Wiring Board:

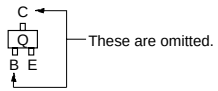
- ○——— : parts extracted from the component side.
- △ : internal component.
- ▒▒▒ : Pattern from the side which enables seeing.

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

- Indication of transisitor.







Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B+ : B+ Line.
- B– : B– Line.
- : adjustment for repair.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
  no mark : FM
  < > : CD
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  : TUNER (FM/AM)
  : MD/VIDEO
  : MIC
  : CD PLAY (ANALOG OUT)
  : CD PLAY (DIGITAL OUT)

TUNER (FM/AM)

ANEL board

LED board

5-2. CIRCUIT BOARDS LOCATION

CK P

VIDEO board

ANEL board

P

BA

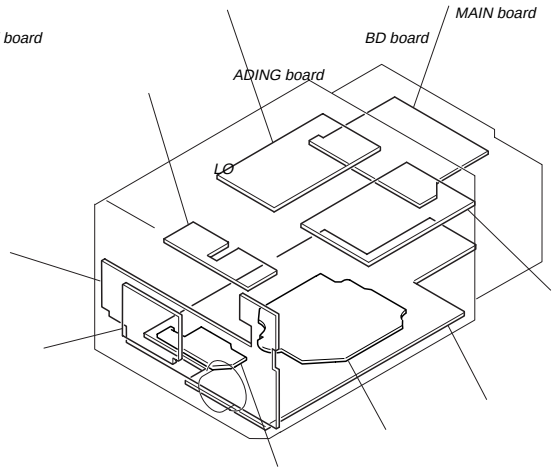
MAIN board

MIC/PC MIX board

BD board

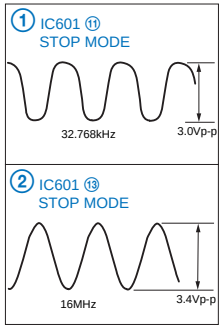
ADING board

LO

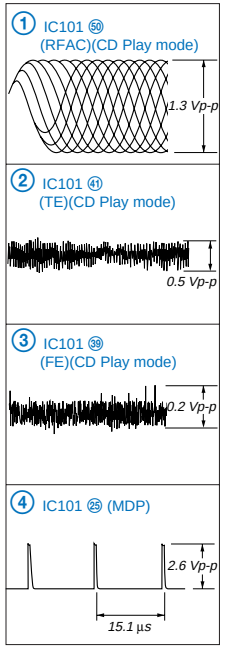


5-3. Waveforms

– MAIN BOARD –



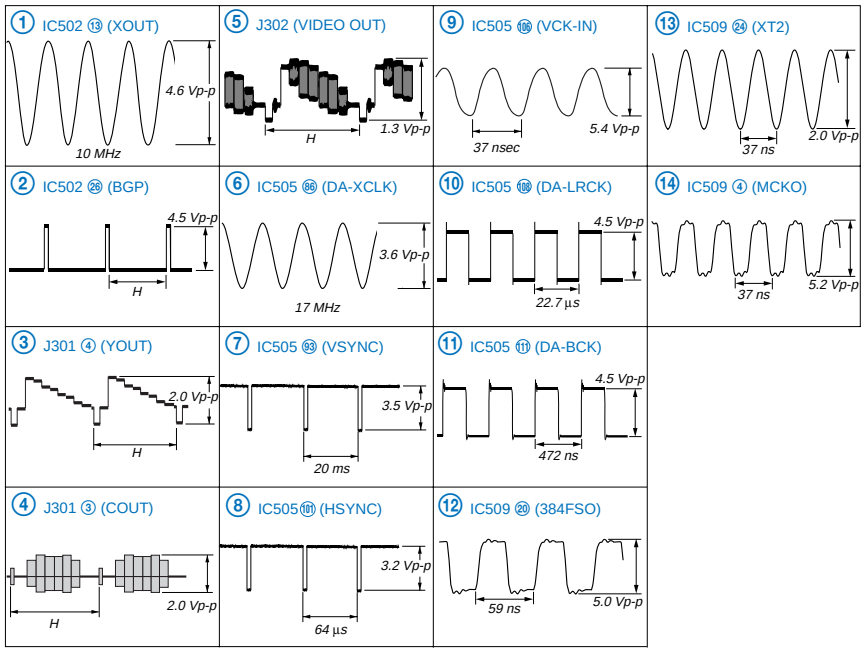
– BD SECTION –



• Semiconductor Location (MAIN BOARD)

Ref. No.	Location	Ref. No.	Location
D2	D-7	IC1	G-3
D3	B-8	IC2	G-6
D4	C-5	IC3	E-6
D5	C-3	IC4	F-5
D6	F-7	IC201	C-3
D7	F-6	IC202	C-2
D8	E-7	IC301	D-9
D9	F-7	IC501	B-1
D10	G-4	IC551	G-4
D14	D-6	IC601	E-4
D15	D-6		
D16	D-6	Q1	B-8
D21	G-5	Q2	G-5
D321	D-10	Q3	G-4
D501	B-1	Q4	G-4
D551	F-5	Q201	C-7
D552	F-5	Q202	D-4
D553	F-6	Q203	D-4
D554	G-3	Q204	D-5
D555	E-6	Q251	C-7
D556	E-6	Q254	D-5
D601	D-4	Q322	D-10
		Q323	D-10
		Q324	D-10
		Q551	G-3

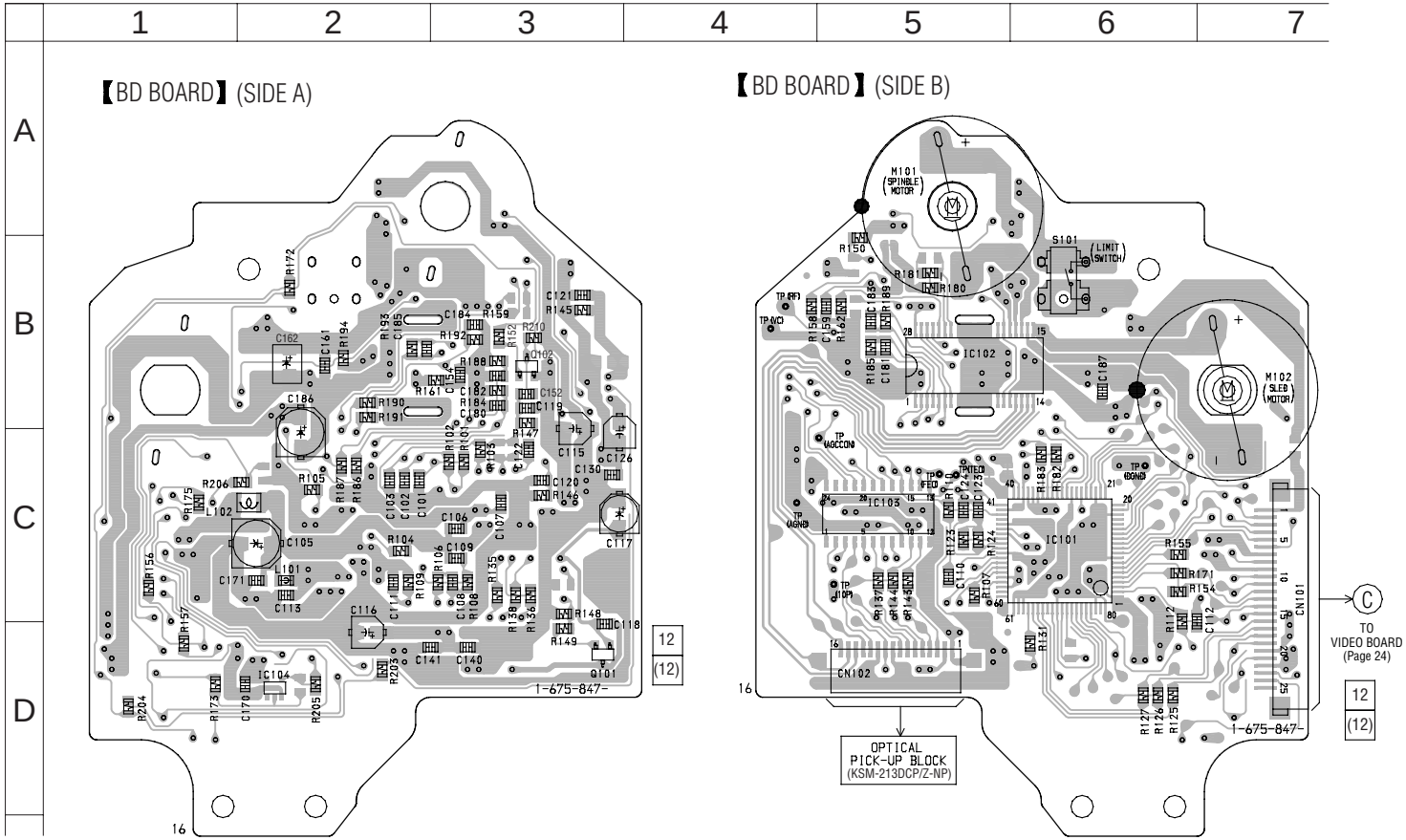
–VIDEO SECTION –



5-4. PRINTED WIRING BOARD –BD SECTION– • See page 15 for Circuit Boards Location.

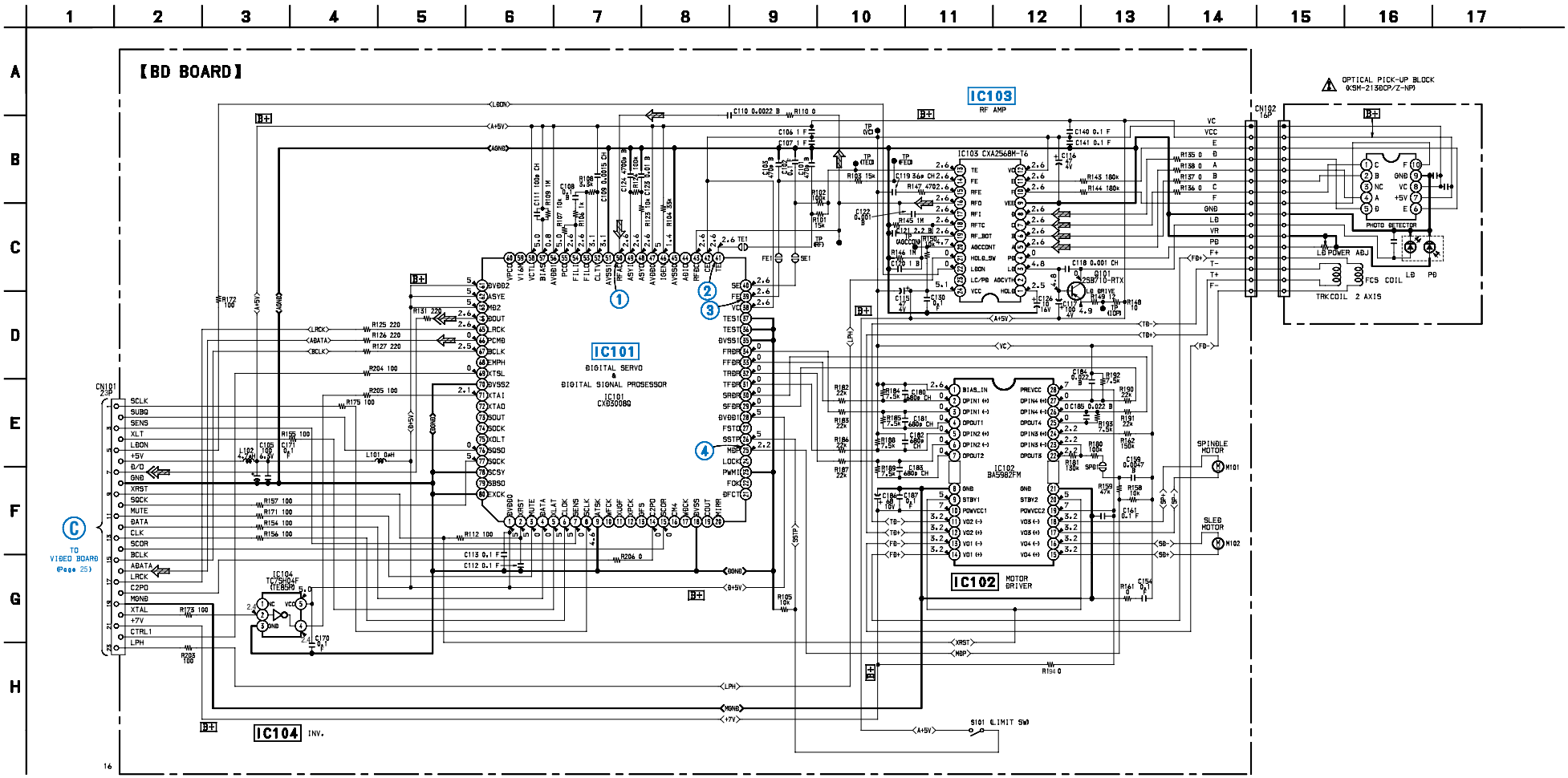
• **Semiconductor Location**

Ref. No.	Location
IC101	C-6
IC102	B-5
IC103	C-5
IC104	D-2
Q101	D-3



5-5. SCHEMATIC DIAGRAM –BD SECTION–

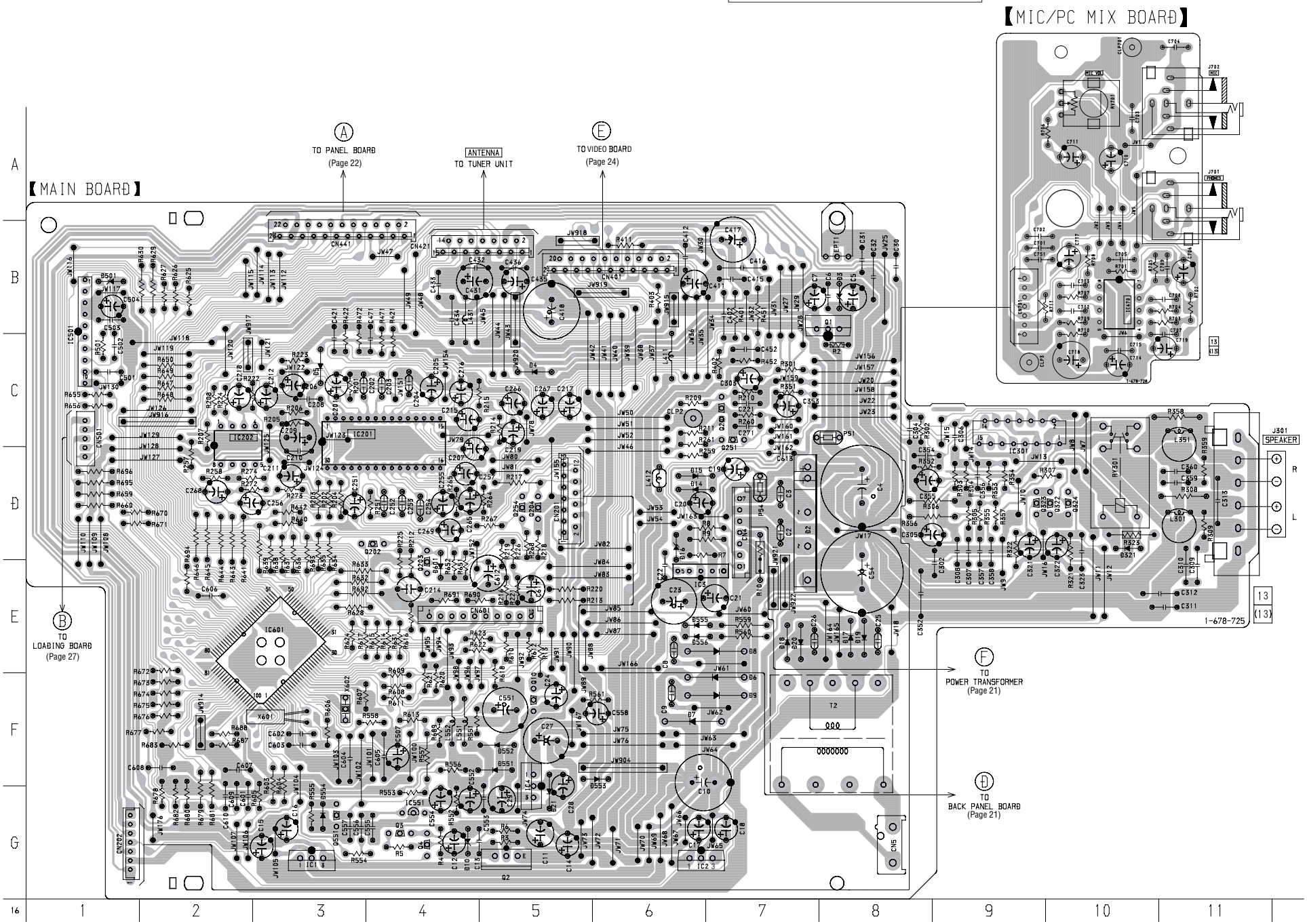
• See page 15 for Waveforms.
• See page 32 for IC Block Diagrams.



5-6. PRINTED WIRING BOARDS –MAIN SECTION–

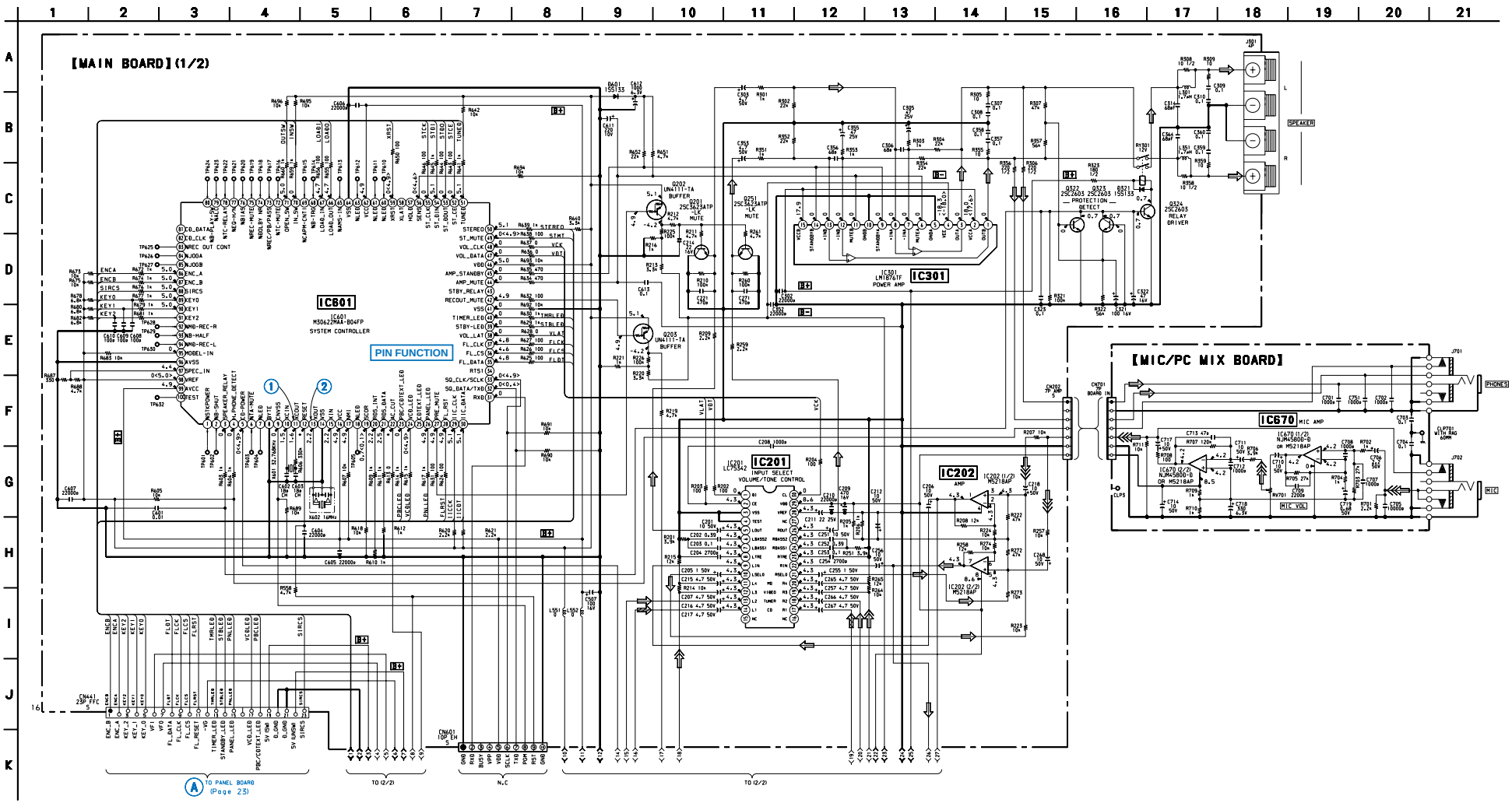
• See page 15 for Circuit Boards Location and Semiconductor Location.

There are a few cases that the part printed on this diagram isn't mounted in this model.

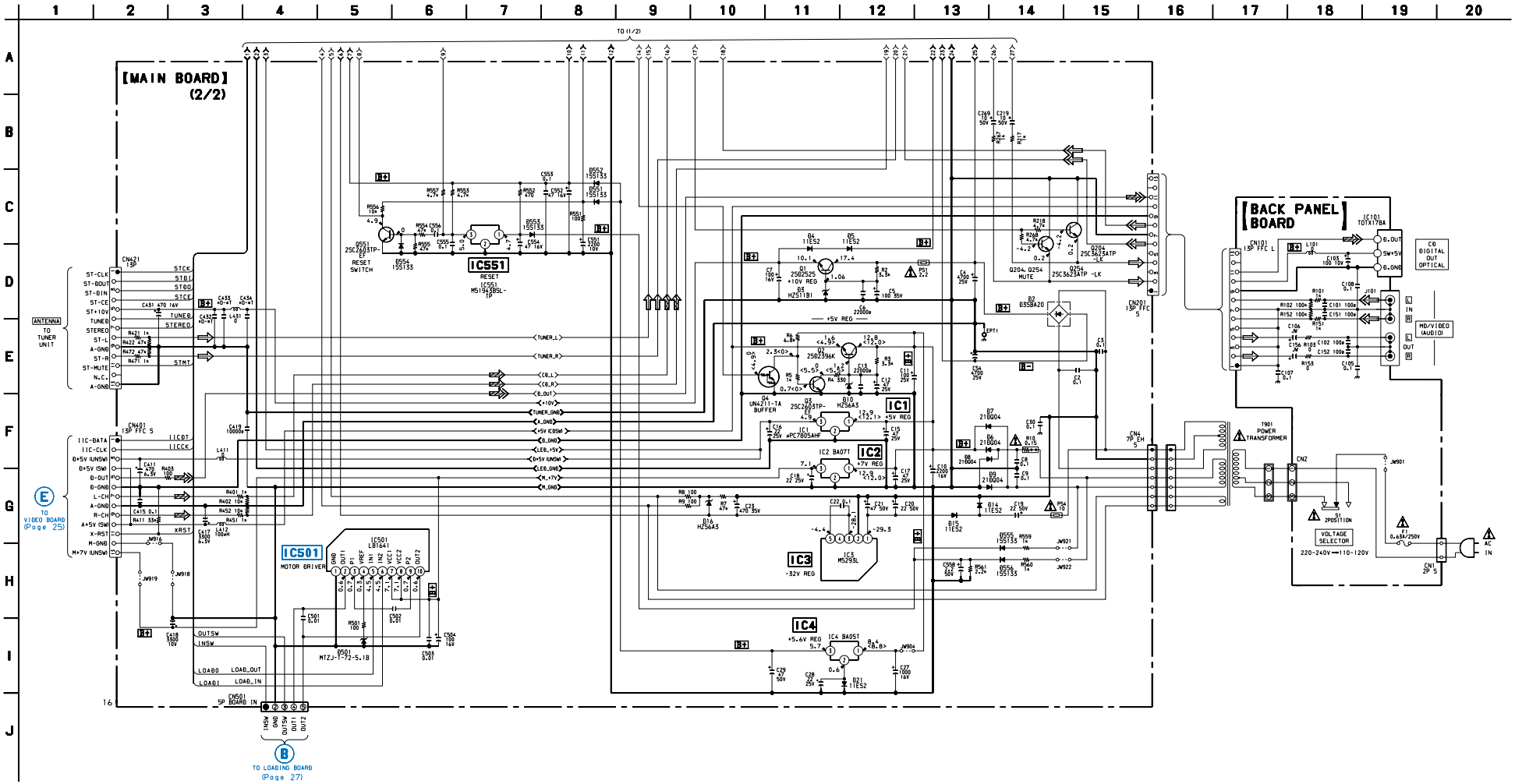


5-7. SCHEMATIC DIAGRAM –MAIN SECTION(1/2)–

• See page 15 for Waveforms.
• See page 28 for IC Pin Function.



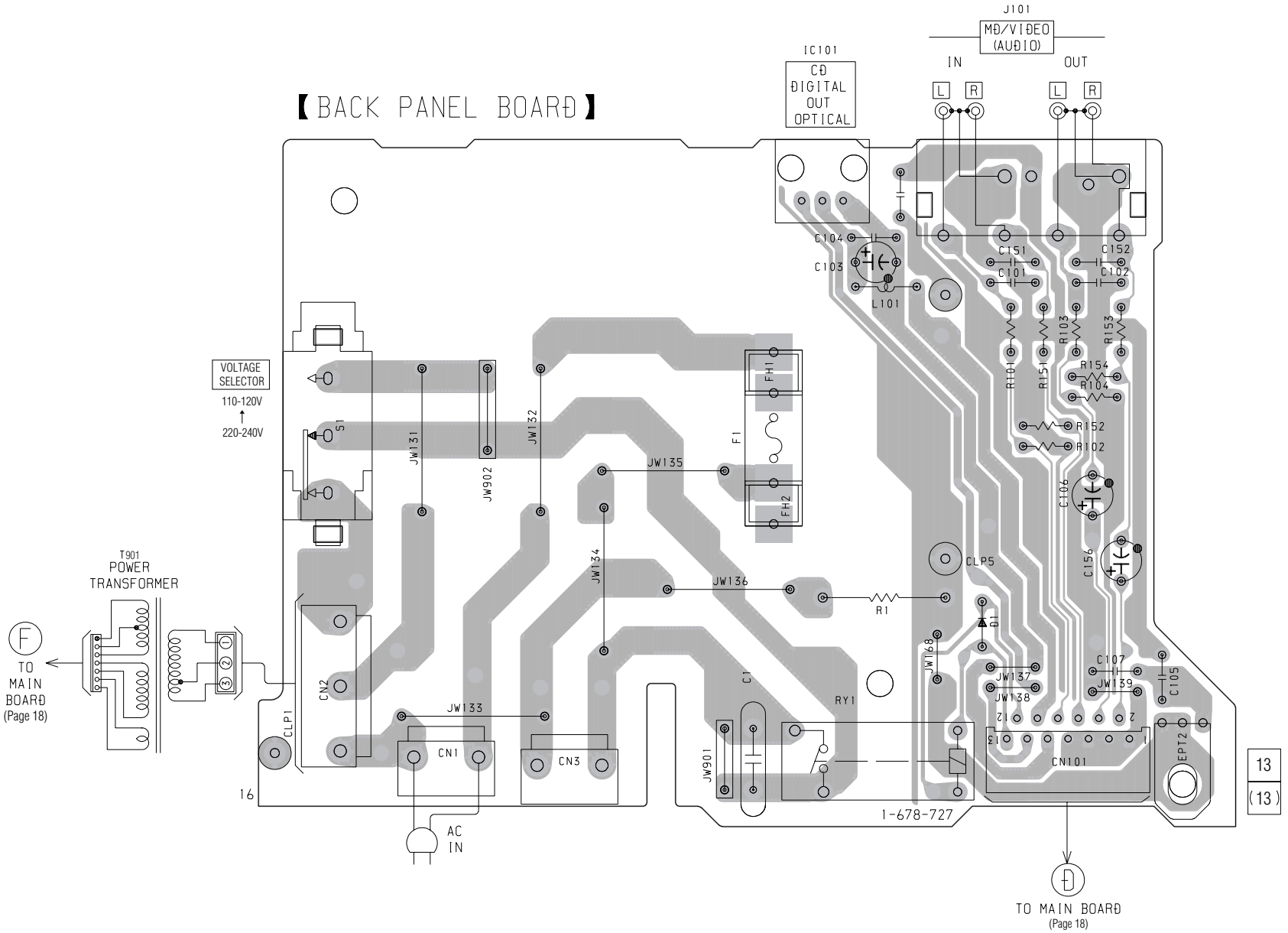
5-8. SCHEMATIC DIAGRAM –MAIN SECTION(2/2)– • See page 34 for IC Block Diagrams.



5-9. PRINTED WIRING BOARDS –POWER SECTION–

• See page 15 for Circuit Boards Location.

There are a few cases that the part printed on this diagram isn't mounted in this model.



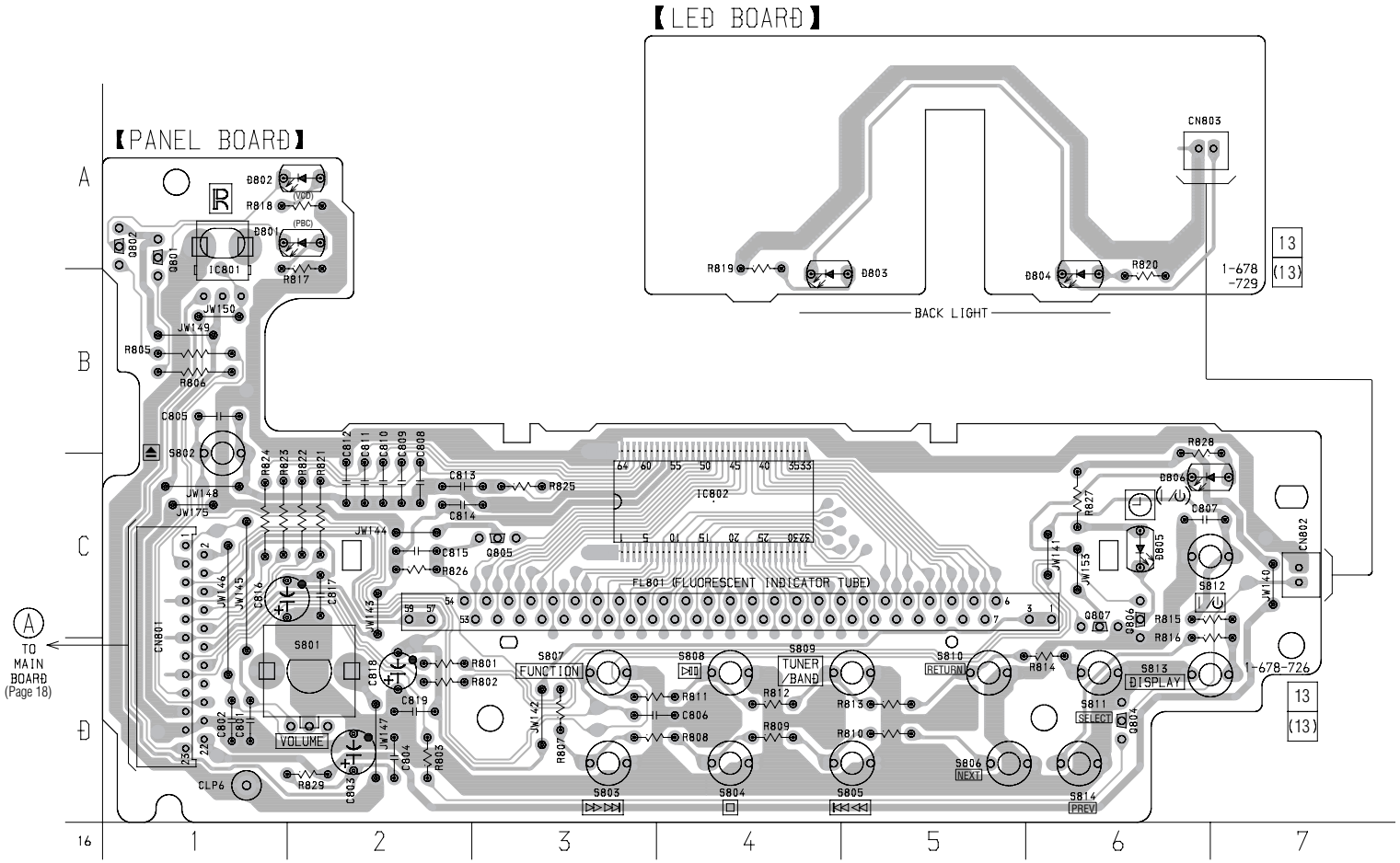
5-10. PRINTED WIRING BOARD –PANEL SECTION–

• See page 15 for Circuit Boards Location.

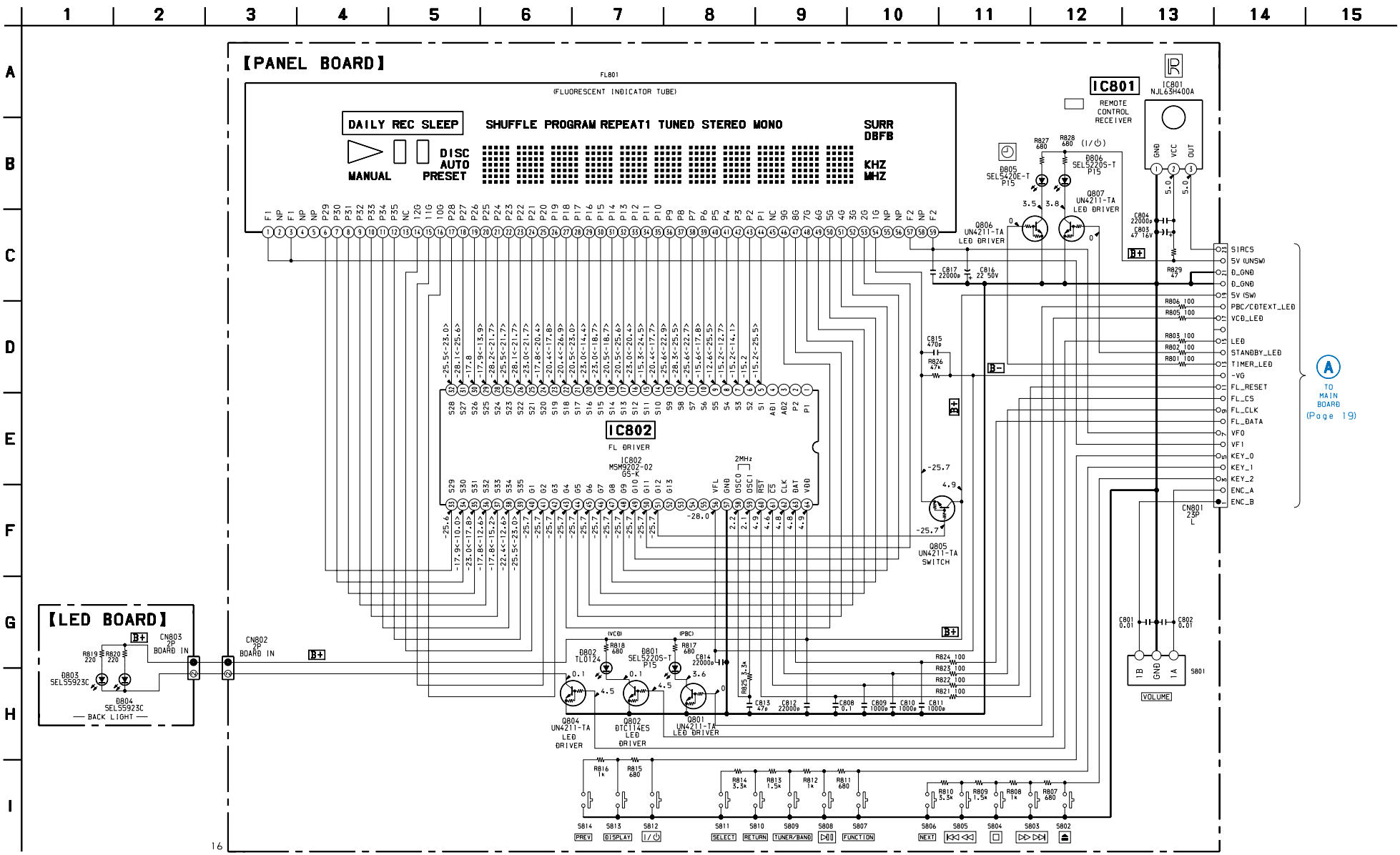
There are a few cases that the part printed on this diagram isn't mounted in this model.

• **Semiconductor Location**

Ref. No.	Location
D801	A-2
D805	C-6
D806	C-7
IC801	A-1
IC802	C-4
Q801	A-1
Q804	D-6
Q805	C-3
Q806	C-6
Q807	C-6



5-11. SCHEMATIC DIAGRAM –PANEL SECTION–



5-12. PRINTED WIRING BOARDS –VIDEO CD SECTION–

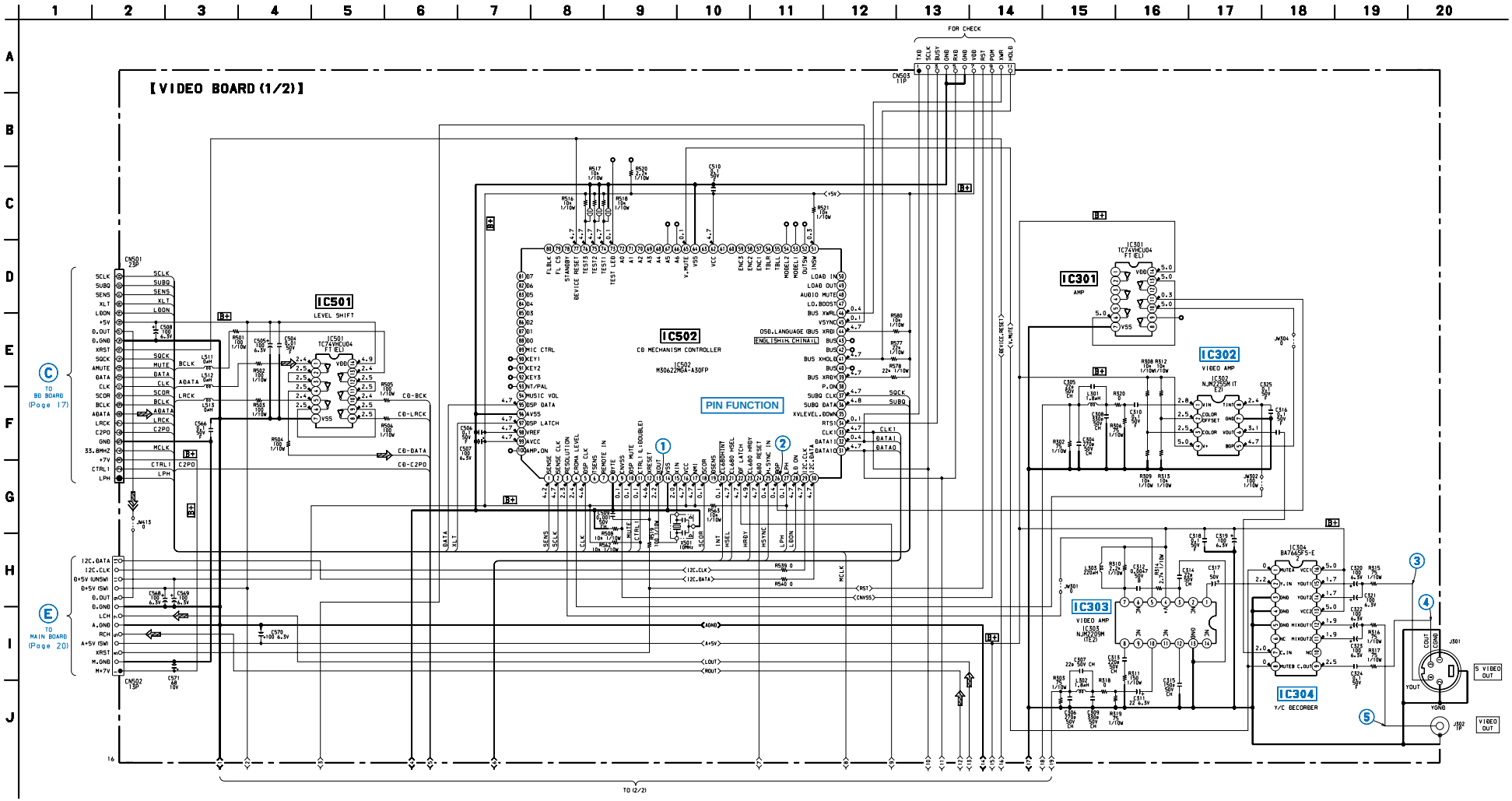
• See page 15 for Circuit Boards Location.

There are a few cases that the part printed on this diagram isn't mounted in this model.

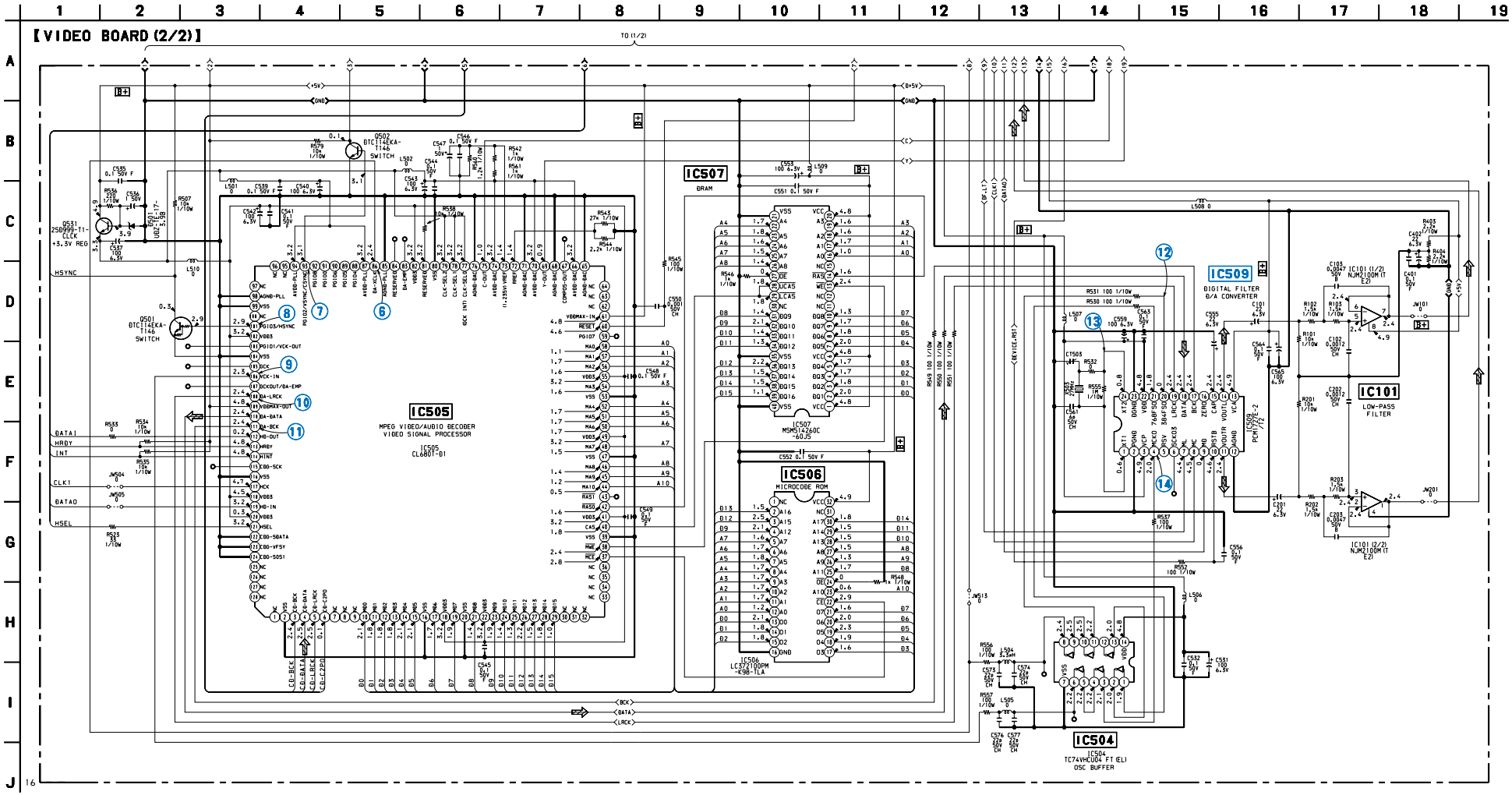
• **Semiconductor Location**

Ref. No.	Location
D501	C-2
IC101	F-4
IC301	B-9
IC302	B-9
IC303	B-4
IC304	B-7
IC501	D-8
IC502	E-9
IC504	E-4
IC505	C-3
IC506	D-7
IC507	C-4
IC509	E-5
Q501	C-3
Q502	C-2
Q531	C-9

5-13. SCHEMATIC DIAGRAM – VIDEO CD SECTION (1/2) – • See page 33 for IC Block Diagrams. • See page 30 for IC Pin Function Description.

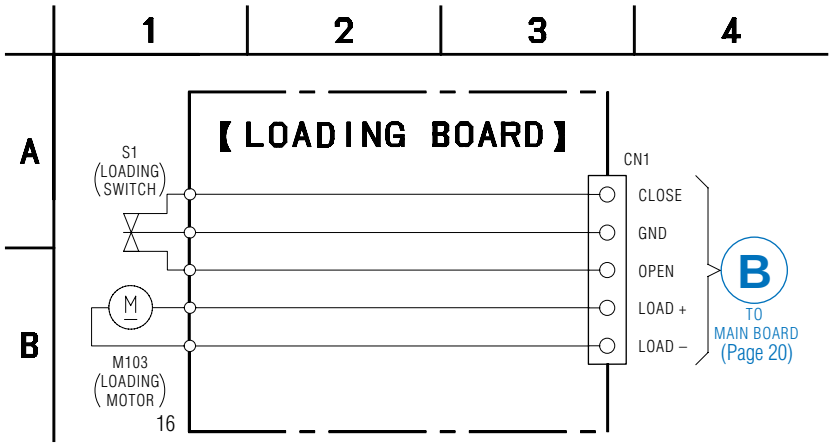


5-14. SCHEMATIC DIAGRAM – VIDEO CD SECTION (2/2) – • See page 15 for Waveforms. • See page 33 for IC Block Diagrams.

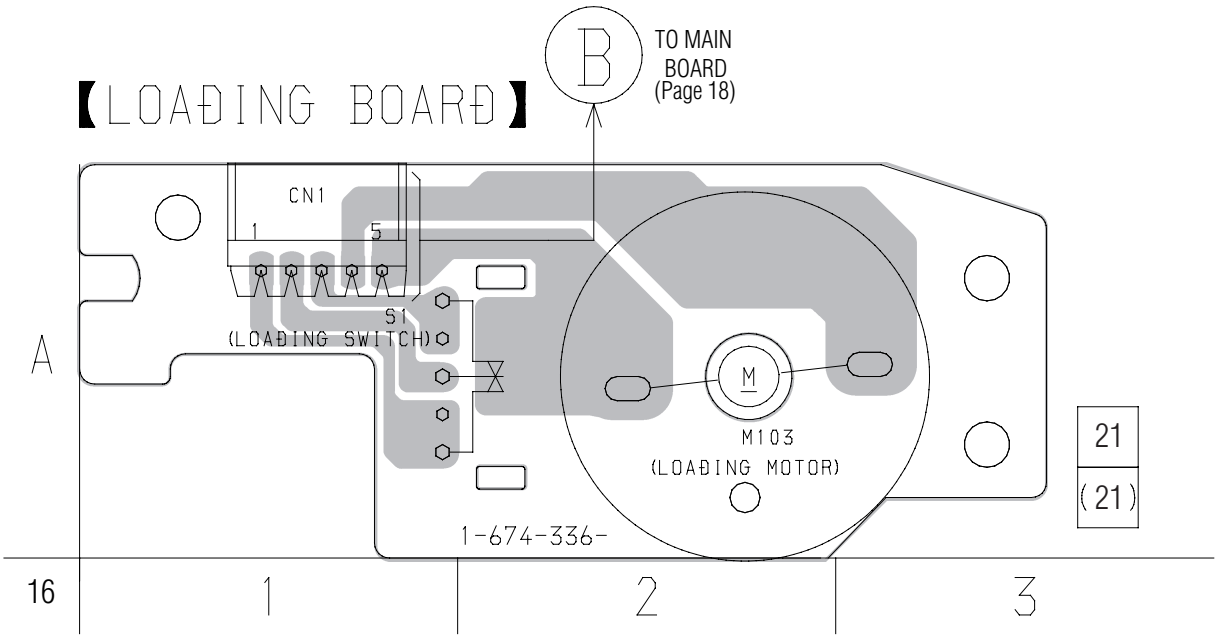


5-15. SCHEMATIC DIAGRAM –LOADING SECTION–

• See page 15 for Waveforms.



5-16. PRINTED WIRING BOARDS –LODING SECTION–



5-17. IC Pin Function

• MAIN BOARD IC601 M30622MAA-B04FP (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Description
1	STKPOWER	I	Not used. OPEN
2	B-SHUT	I	Not used. OPEN
3	SPEAKER RELAY	O	FRONT-RELAY ON(H)/OFF(L)
4	H.PHONE DETECT	I	HEAD PHONEs detection. Connected (H), Not connected (L).
5	CD-POWER	O	CD-POWER ON(H)/OFF(L)
6	TA-MUTE	O	Not used. OPEN
7	LED	—	Not used. OPEN
8	BYTE	—	For switching external data bus wedth
9	CNVss	—	For switching precessor mode
10	XCIN	I	SUB CLOCK IN
11	XCOUT	O	SUB CLOCK OUT
12	RESET	—	SYSTEM RESET IN
13	X0UT	O	MAIN SYSTEM CLOCK OUT
14	VSS	—	Vss
15	XIN	I	MAIN SYSTEM CLOCK IN(16MHz)
16	VCC	—	POWER SUPPLY(+5V)
17	NMI	I	PULL UP(EVER +5V) CAN'T USE
18	LED	—	Not used. OPEN
19	SCOR	I	CD Q-DATA REQUEST
20	RDS-INT	I	RDS INT
21	RDS-DATA	I	RDS DATA
22	AC-CUT	I	AC CUT ON(L)/OFF(H) CHECK
23	PBC/CDTEXT LED	O	CDTEXT LED (RB5) / PBC LED (VB5)
24	VCD LED	O	VCD_LED
25	CDTEXT LED	O	Not used. OPEN
26	PANEL LED	O	PANEL_LED
27	PRE MUTE	O	TA LINE-MUTE ON(L)/OFF(H)
28	FL-RESET	O	FL RESET
29	IIC_CLK	I	IIC SCL
30	IIC_DATA	I	IIC SDA
31	RXD	—	Not used. OPEN
32	SQ-DATA-IN	O	CD DATA IN
33	SQ-CLK	I	Note: SQ CLK : Input when CD-POWER is L
34	RTS1	O	Not used. OPEN
35	FL-DATA	O	FL DATA
36	FL-CS	O	FL CHIP SELECT
37	FL-CLK	O	FL CLK
38	VOL_CLK	O	LC75342 LATCH
39	STBY LED	O	STANDBY LED
40	TIMER LED	O	TIMER LED
41	VSS	—	FLASH VSS
42	RECOUT MUTE	—	FL FILAMENT ON(H)/OFF(L) (for ECO)
43	STBY_RELAY	—	Not used. OPEN
44	AMP_MUTE	I	Always O/H when power is OFF except for J, U and CED
45	AMP_STANDBY	I	Always O/H when power is OFF except for J, U and CED
46	VDD	—	FLASH VDD
47	VOL_DATA	O	LC75342 DATA
48	VOL_CLK	O	LC75342 CLOCK
49	ST-MUTE	O	TUNER MUTE
50	STEREO	I	STEREO IN(L)/OFF(H)

Pin No.	Pin Name	I/O	Description
51	TUNED	I	TUNED IN(L)/OFF(H)
52	ST-CE	O	TUNER CHIP ENB
53	ST-DOUT	O	TUNER DATA OUT
54	ST-DIN	I	TUNER DATA IN
55	ST-CLK	O	TUNER CLOCK
56	SENS	I	From CXP2587 SENS
57	HOLD	—	Not used. OPEN
58	XLTAT	—	Not used. OPEN
59	XRST	O	CD RESET
60	LED	O	Not used. OPEN
61	LED	O	Not used. OPEN
62	VCC	—	POWER SUPPLY(+5V)
63	LED	O	Not used. OPEN
64	VSS	—	Vss
65	AMS-IN	I	Not used. OPEN
66	LOAD-OUT	O	LOAD OUT
67	LOAD-IN	O	LOAD IN
68	B-TRG	I	Not used. OPEN
69	CAPM-CNT1	I	Not used. OPEN
70	IN SW	I	CDM55 IN SW
71	OPEN-SW	I	TRAY OPEN switch
72	TC-MUTE	I	Not used. OPEN
73	REC/PB/PASS	I	Not used. OPEN
74	DOLBY NR	I	Not used. OPEN
75	REC-MUTE	I	Not used. OPEN
76	BIAS	I	Not used. OPEN
77	EQ-H/N	I	Not used. OPEN
78	TC-RELAY	I	Not used. OPEN
79	ALC	I	Not used. OPEN
80	B-PLAY-SW	I	Not used. OPEN
81	CD-DATA	—	Not used. OPEN
82	CD-CLK	—	Not used. OPEN
83	REC-OUT	I	Not used. OPEN
84	JOG A	I	Not used. OPEN
85	JOG B	I	Not used. OPEN
86	ENC A	I	volume(A)
87	ENC B	I	volume(B)
88	SIRCS	I	remote commander input
89	KEY0	I	KEY-line(0)
90	KEY1	I	KEY-line(1)
91	KEY2	I	KEY-line(2)
92	MD REC R	I	Not used. OPEN
93	B-HALF	I	Not used. OPEN
94	MD REC L	I	Not used. OPEN
95	MODEL-IN	I	CMT-RB5(GND) / CMT-VB5(Vdd)
96	AVSS	—	Analog ground
97	SPEC-IN	I	SPEC IN
98	VREF	—	Analog Reference Voltage
99	AVCC	—	Analog Power Supply
100	TEST	O	SOFT CHECK OUT

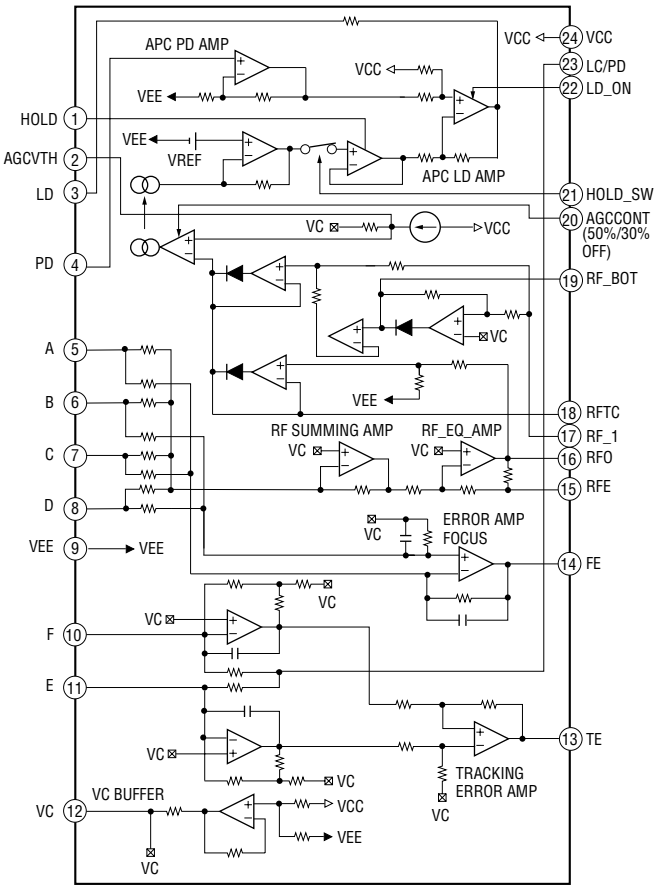
• IC502 M30620MCA-A45FP (CD MECHANISM CONTROLLER) (VIDEO BOARD)

Pin No.	Pin Name	I/O	Description
1	SENSE	I	Internal status (SENSE) signal input from the CXD3008Q (IC101)
2	SENSE CLK	O	Sense serial data reading clock signal output to the CXD3008Q (IC101)
3	RESOLUTION	O	Y resolution output
4	CHROMA LEVEL	O	Chroma level output
5	DSP CLK	O	Serial data transfer clock signal output to the CXD3008Q (IC101)
6	TSENS	O	Not used (open)
7	REMOTE IN	I	Remote control signal input terminal Not used (open)
8	BYTE	I	External data bus line byte selection signal input "L": 16 bit, "H": 8 bit (fixed at "L")
9	CN VSS	—	Ground terminal
10	DSP MUTE	O	Muting on/off control signal output to the CXD3008Q (IC101) "H": muting on
11	CTRL1	O	Clock selection signal output to the CXD3008Q (IC101) "L": 16.9344 MHz (double speed), "H": 33.8688 MHz
12	$\overline{\text{XRESET}}$	I	Reset signal input from the system controller (IC501) "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
13	XOUT	O	Main system clock output terminal (10 MHz)
14	VSS	—	Ground terminal
15	XIN	I	Main system clock input terminal (10 MHz)
16	VCC	—	Power supply terminal (+5V)
17	NMI	I	Non-maskable interrupt input terminal (fixed at "H" in this set)
18	SCOR	I	Subcode sync (S0+S1) detection signal input from the CXD3008Q (IC101)
19	DSENS	O	Not used (open)
20	$\overline{\text{CL680 HINT}}$	I	Interrupt request signal input from the MPEG video/audio decoder (IC505)
21	CL680 HSEL	O	
22	DF LATCH	O	Serial data latch pulse output to the D/A converter (IC509) "L" active
23	CL680 HRDY	—	
24	$\overline{\text{CL680 RESET}}$	O	Reset signal output to the MPEG video/audio decoder (IC505) "L": reset
25	H.SYNC IN	I	Horizontal sync signal input
26	BGP	O	Burst gate pulse signal output
27	LPH	O	AGC hold signal output
28	LD ON	O	Laser power selection signal output to the CXA2568M (IC103) "H": laser on
29	12C.CLK	I/O	I^2C clock signal from CD mechanism control (IC501).
30	12C.DATA	I/O	I^2C data signal from CD mechanism control (IC501).
31	DATA1O	O	Serial data output to the MPEG video/audio decoder (IC506) and D/A converter (IC509)
32	DATA1I	I	Serial data input from the MPEG video/audio decoder (IC506)
33	CLK1	O	Serial data transfer clock signal output to the MPEG video/audio decoder (IC506) and D/A converter (IC509)
34	RTS1	O	RTS signal to serial port (check connector).
35	XVLEVEL.DOWN	O	Not used (open)
36	SUBQ DATA	I	Sub-code Q data input from the CXD3008Q (IC101)
37	SUBQ CLK	O	Sub-code Q data reading clock signal output to the CXD3008Q (IC101)
38	P.ON	O	Power on/off control signal output terminal Not used (open)
39	BUS XRDY	I	Ready signal input terminal Not used (fixed at "H")
40	BUS	O	Not used (open)
41	BUS XHOLD	I	Hold signal input terminal Not used (fixed at "H")
42, 43	BUS	O	Not used (open)
44	OSD.LANGUAGE	I	OSD language select input terminal "H": English, "L": China
45	VSYNC	I	Vertical sync signal input
46	BUS XWRL	O	Bus write signal output.
47	LO.BOOST	O	Not used (open)
48	AUDIO MUTE	O	Audio muting on/off control signal output terminal "L": muting on Not used (open)
49	LOAD OUT	O	Loading motor drive signal output terminal Not used (open)
50	LOAD IN	O	Loading motor drive signal output terminal Not used (open)
51	INSW	I	Disc detection (load in) switch input terminal

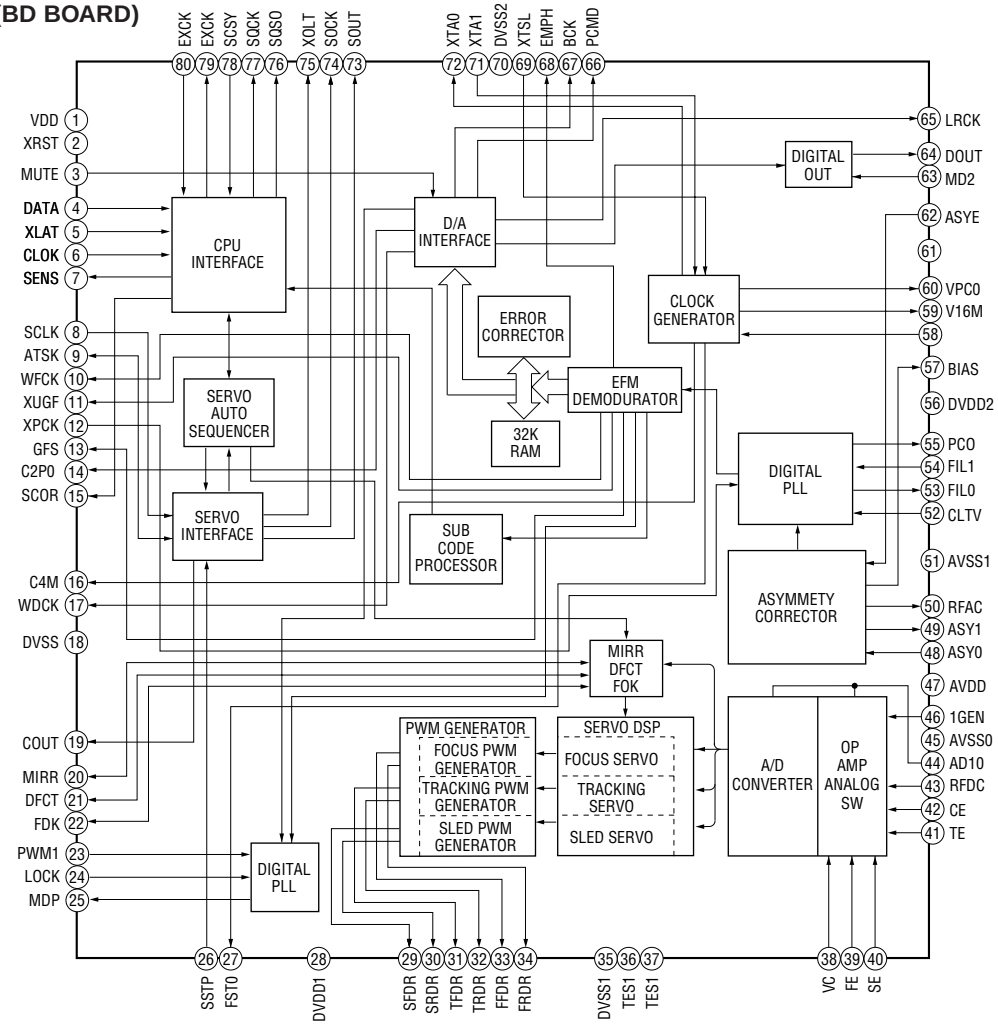
Pin No.	Pin Name	I/O	Description
52	OUTSW	I	Disc detection (load out) switch input terminal Not used (fixed at “H”)
53	MODEL1	—	Not used
54	MODEL2	—	Not used
55	TBLL	—	Not used (open)
56	TBLR	—	Not used (open)
57 to 59	ENC1 to ENC3	—	Not used (open)
60, 61		—	Not used (open)
62	VCC	—	Power supply terminal (+5V)
63		—	Not used (open)
64	VSS	—	Ground terminal
65	V.MUTE	O	Video muting on/off control signal output
66 to 72	A6 to A0	O	Address signal output for the external device Not used (open)
73	TEST LED	O	LED drive signal output for the self diagnosis indicator (D502) Normally: “L” (LED on)
74	TEST1	I	Setting terminal for the test mode 1 (for VCD check) Normally: fixed at “H” (“L”: test mode)
75	TEST2	I	Setting terminal for the test mode 2 (for SERVO check) Normally: fixed at “H” (“L”: test mode)
76	TEST3	I	Setting terminal for the test mode 3 Normally: fixed at “H” (“L”: test mode) Not used (fixed at “H”)
77	DEVICE RESET	O	System reset signal output to the CXD3008Q (IC101), BA5974FP (IC102) and D/A converter (IC509) “L”: reset
78	STANDBY	O	Standby on/off control signal output terminal Not used (open)
79	FL CS	O	Chip select signal output terminal Not used (open)
80	FLBLK	O	Blank control signal output terminal Not used (open)
81 to 88	D7 to D0	I/O	Two-way data bus with the external device Not used (open)
89	MIC CTRL	—	Not used.
90 to 92	KEY1 to KEY3	I	Key input terminal Not used (fixed at “H”)
93	NT/PAL	—	Not used.
94	MUSIC VOL	—	Not used.
95	DSP DATA	O	Serial data output to the CXD3008Q (IC101)
96	AVSS	—	Ground terminal (for A/D conversion)
97	DSP LATCH	O	Serial data latch pulse output to the CXD3008Q (IC101)
98	VREF	I	Reference voltage (+5V) input terminal (for A/D conversion)
99	AVCC	—	Power supply terminal (+5V) (for A/D conversion)
100	AMP ON	—	Not used.

5-18. IC BLOCK DIAGRAMS

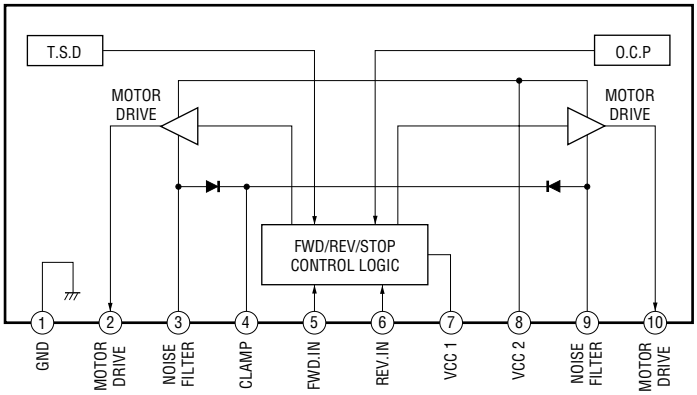
IC103 CXA2568M-T6 (BD BOARD)



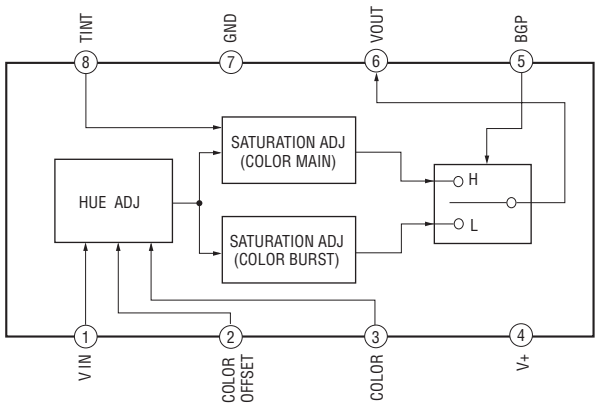
IC101 CXD3008Q (BD BOARD)



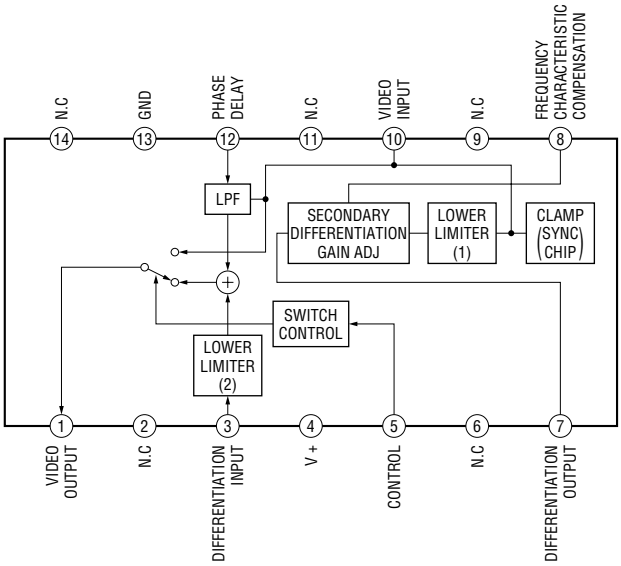
IC501 LB1641 (MAIN BOARD)



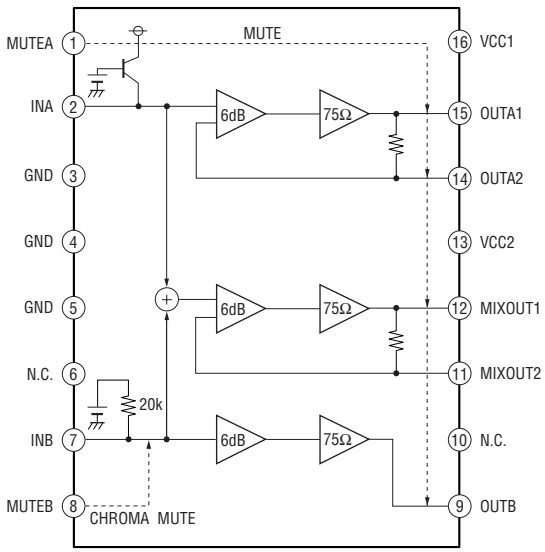
IC302 NJM2255M (VIDEO BOARD)



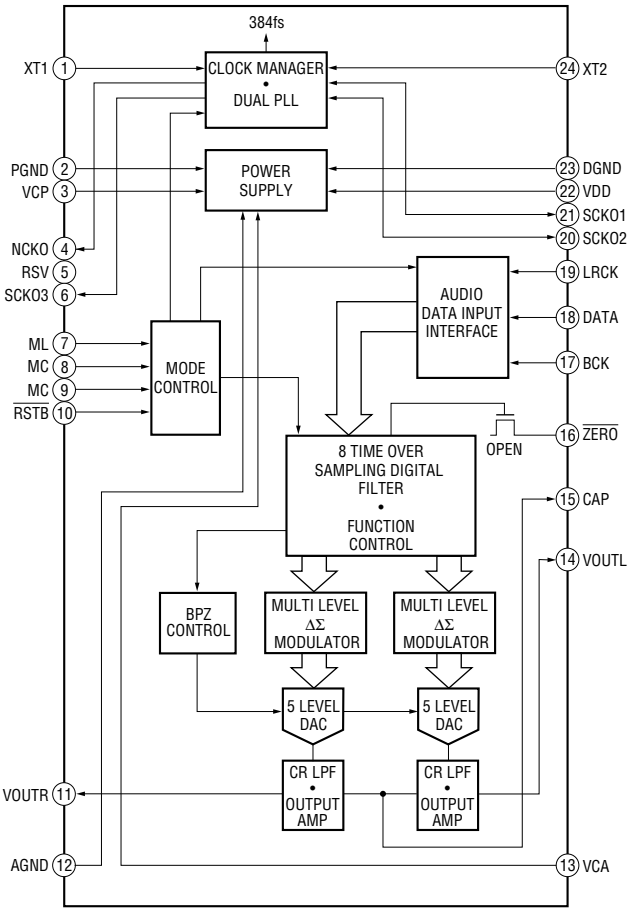
IC303 NJM2209M (VIDEO BOARD)



IC304 BA7665FS-E2 (VIDEO BOARD)



IC509 PCM1727E-2/T2 (VIDEO BOARD)



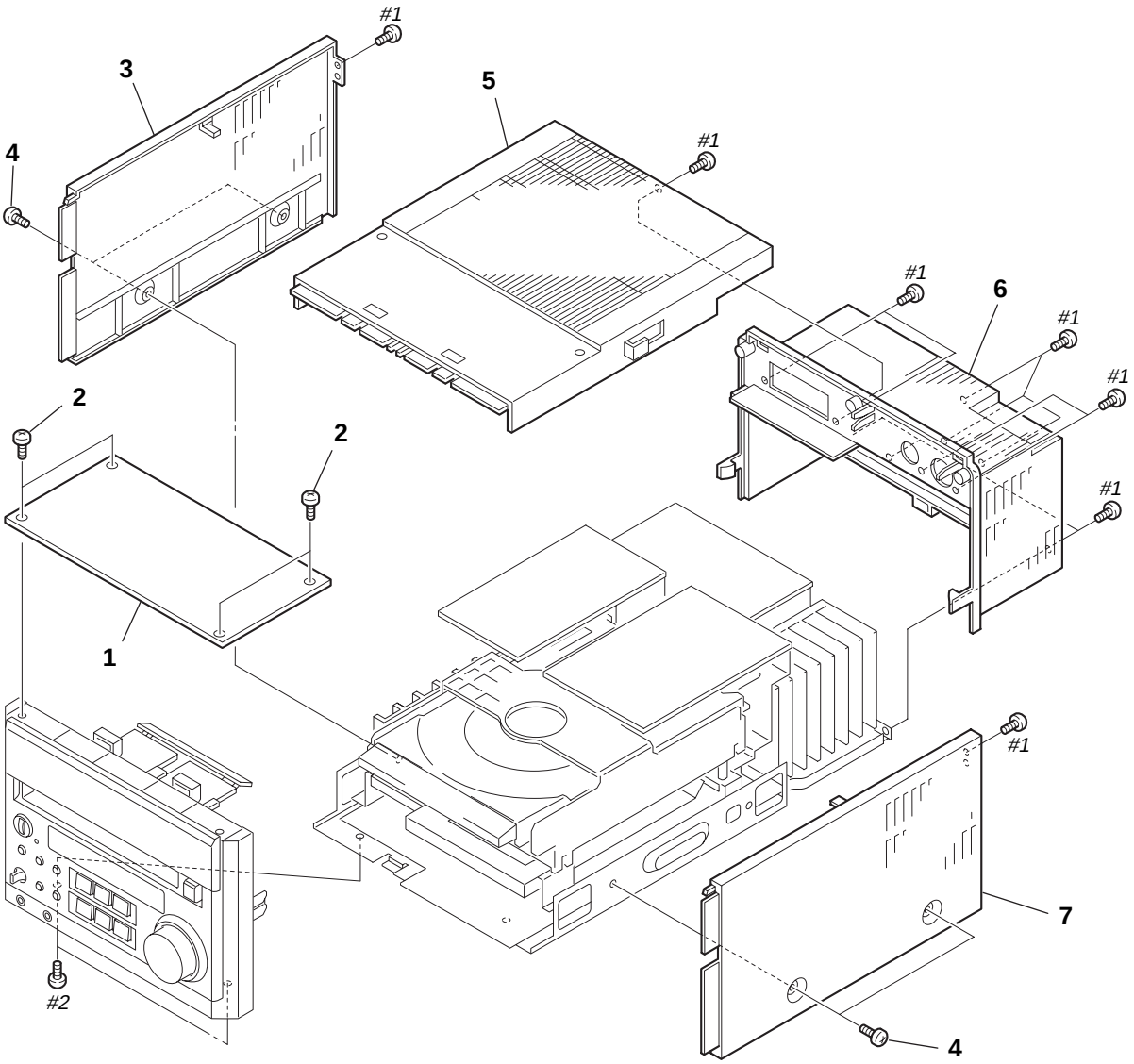
SECTION 6
EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

6-1. CASE(TOP) SECTION

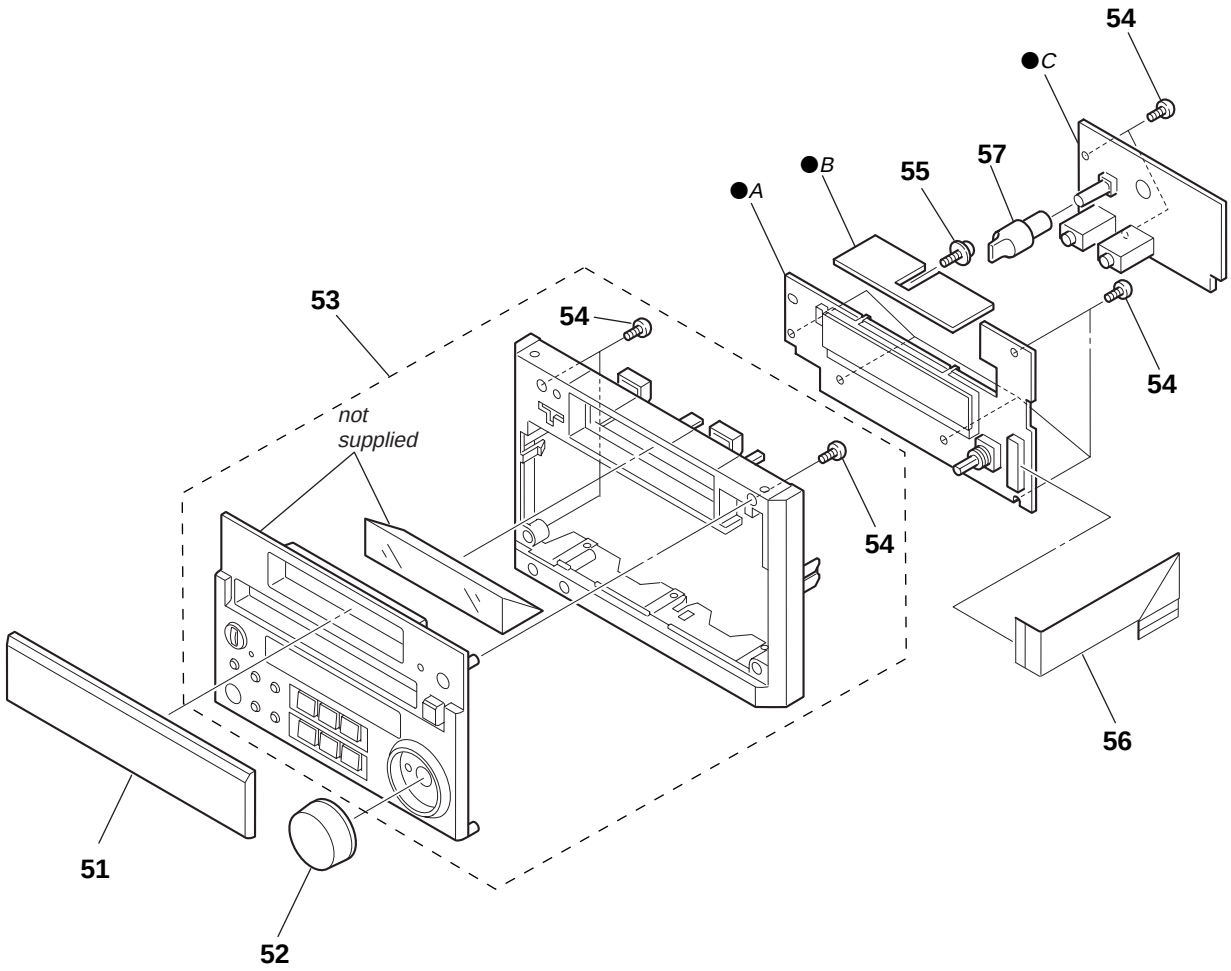


Ref. No.	Part No.	Description	Remarks
1	4-230-227-11	PLATE (TOP), ORNAMENTAL	
2	4-230-228-01	SCREW (TOP)	
3	4-230-225-01	CASE (LEFT)	
4	3-363-099-21	SCREW(CASE 3 TP2)	
5	4-230-224-01	CASE (TOP)	
6	4-230-222-31	PANEL, BACK	
7	4-230-226-01	CASE (RIGHT)	

6-2. FRONT PANEL SECTION

Supplied with MAIN board.

- ●*A : PANEL board*
- ●*B : LED board*
- ●*C : MIC/PC MIX BOARD*

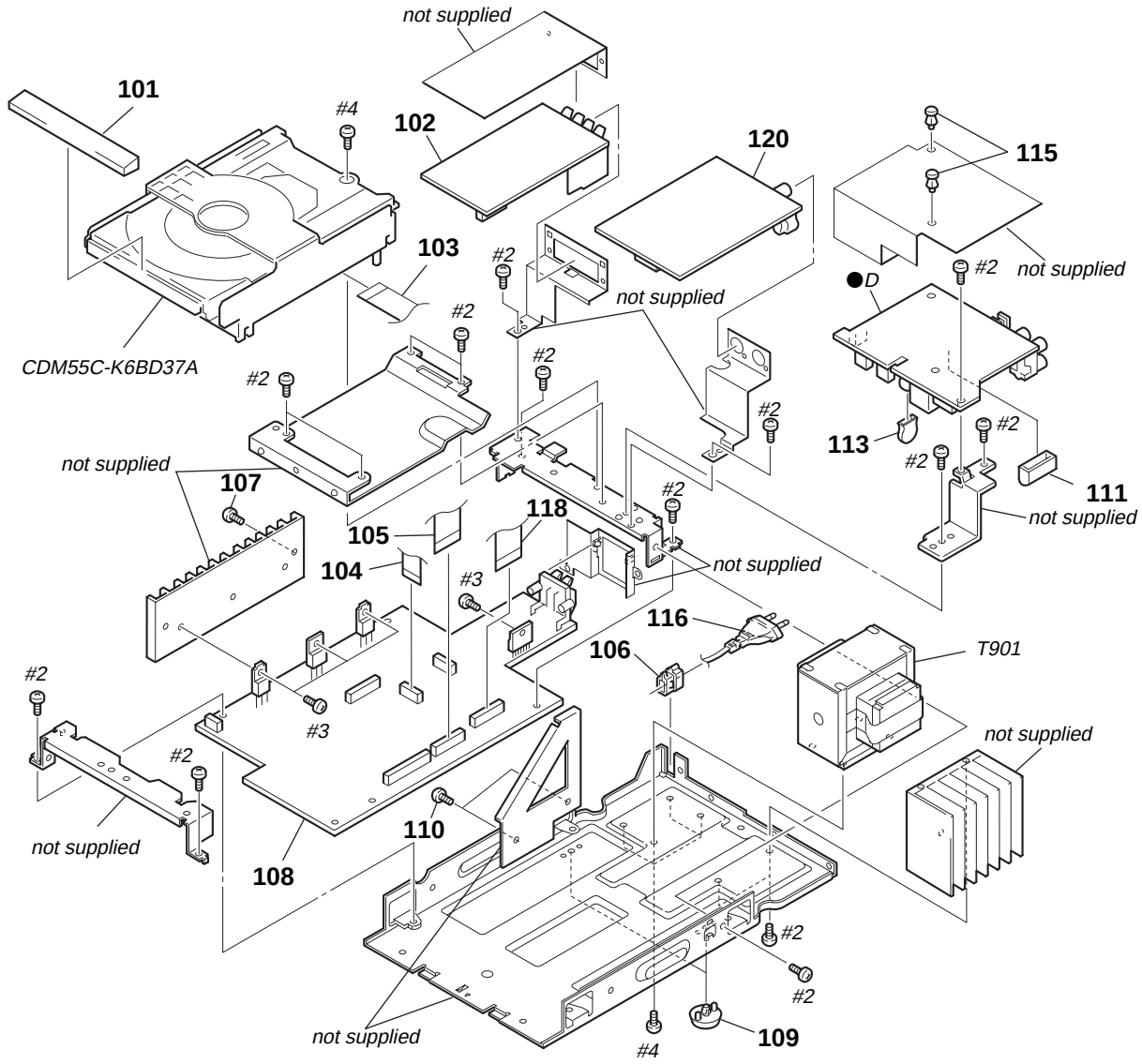


Ref. No.	Part No.	Description	Remarks
51	4-230-213-21	WINDOW (TOP)	
52	4-230-202-01	KNOB (MAIN)	
53	X-4953-277-1	PANEL SUB ASSY, FRONT	
54	4-951-620-01	SCREW (2.6X8), +BVTP	
55	4-933-134-11	SCREW (+PTPWH M2.6X8)	
56	1-765-343-11	WIRE (FLAT TYPE) (23 CORE)	
57	4-230-203-01	KNOB (MIXING)	

6-3. CHASSIS SECTION

Supplied with MAIN board.

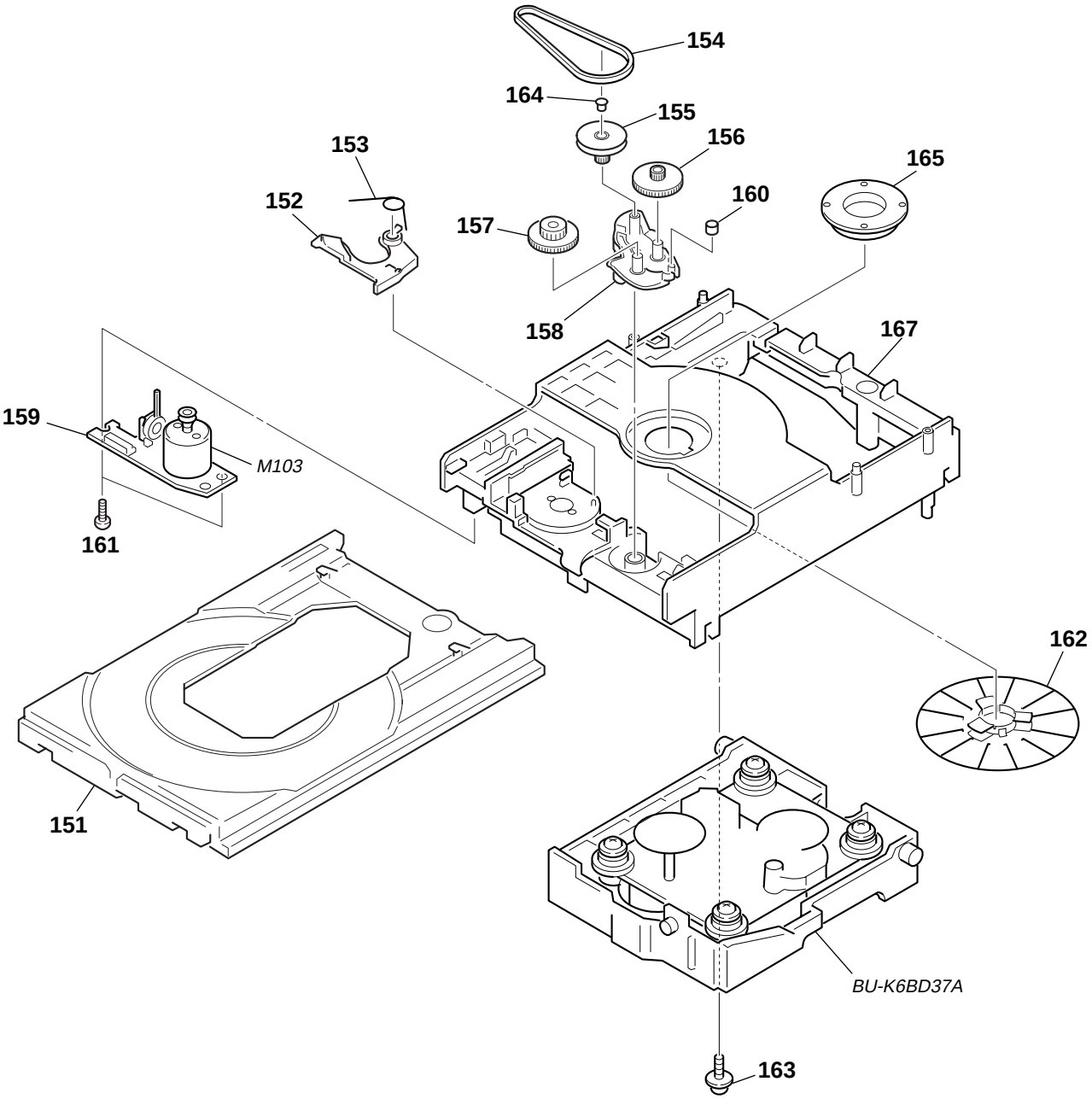
●D : BACK PANEL board



Ref. No.	Part No.	Description	Remarks
101	4-230-206-01	PANEL, LOADING	
102	1-693-488-11	TUNER (FM/AM)	
103	1-782-648-11	WIRE (FLAT TYPE) (23 CORE)	
104	1-757-266-11	WIRE (FLAT TYPE) (13 CORE)	
105	1-769-980-11	WIRE (FLAT TYPE) (13 CORE)	
106	3-703-244-00	BUSHING (2104), CORD	
107	3-704-515-01	SCREW (BV/RING)	
108	A-4475-307-A	MAIN BOARD, COMPLETE	
109	4-965-822-01	FOOT	
110	3-970-608-01	SUMITITE (B3), +BV	
* 111	3-743-347-01	COVER, FUSE	
* 113	4-374-846-21	COVER, CAPACITOR, CAP TYPE	
115	3-531-576-01	RIVET	
⚠116	1-775-787-41	CORD, POWER	
118	1-690-589-31	WIRE (FLAT TYPE) (13 CORE)	
120	A-4725-499-A	VIDEO BOARD, COMPLETE	
⚠T901	1-435-653-11	TRANSFORMER, POWER	

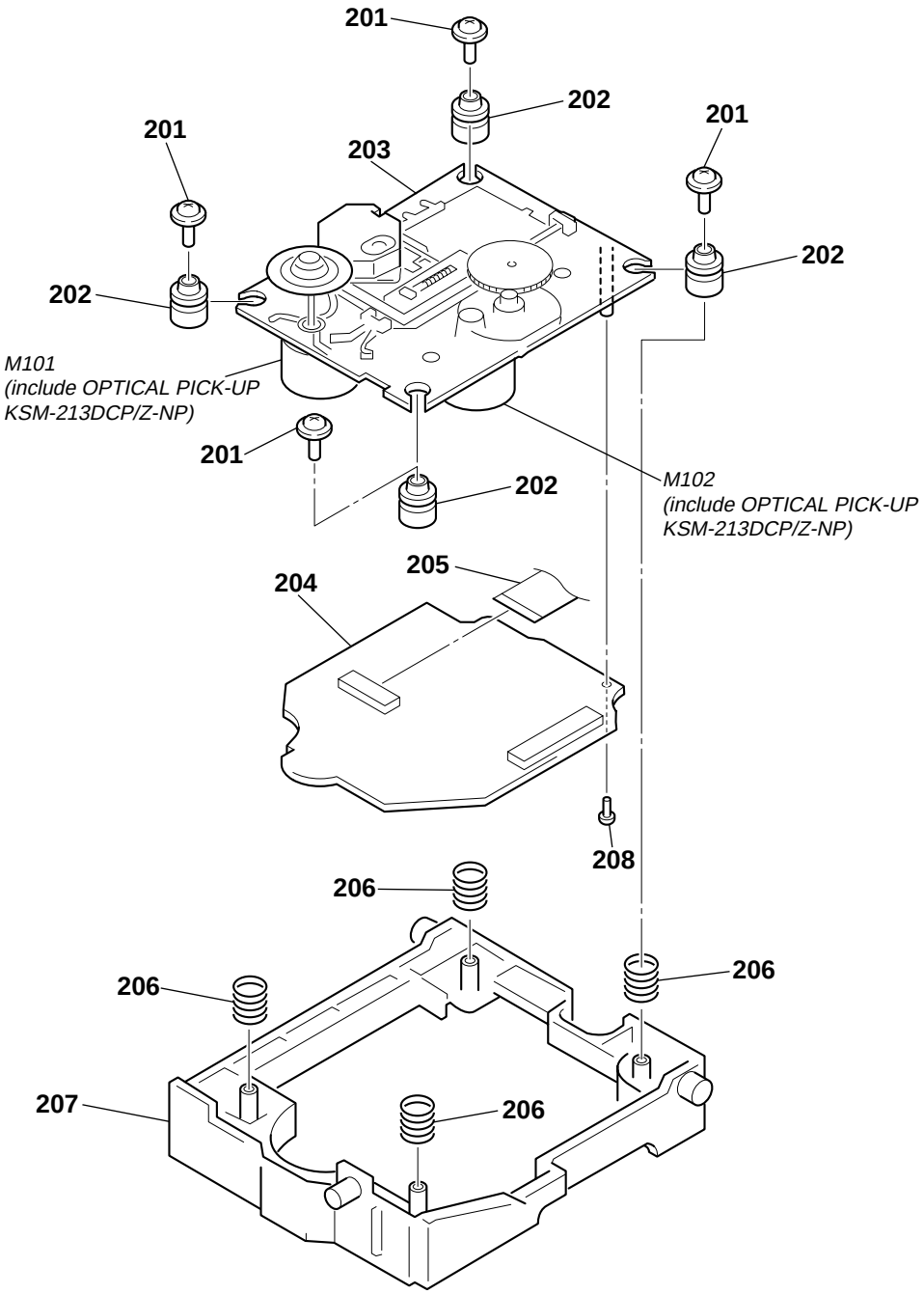
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

6-4. CD MECHANISM DECK SECTION (CDM55C-K6BD37A)



Ref. No.	Part No.	Description	Remarks
151	4-224-894-11	TRAY (CDM55D)	
152	4-220-229-01	LEVER (SW)	
153	4-220-239-11	SPRING, TORSION	
154	4-221-816-11	BELT (CDM55)	
155	4-220-234-01	PULLEY (LDG)	
156	4-220-238-01	GEAR (B)	
157	4-220-237-01	GEAR (A)	
158	4-220-233-01	CAM (CDM55)	
159	1-674-336-21	LOADING BOARD	
160	4-221-815-01	ROLLER	
161	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
162	X-4953-195-1	PULLEY (AT) ASSY	
163	4-985-672-01	SCREW (+PTPWHM2.6), FLOATING	
164	4-227-598-01	SPACER (55)	
165	1-452-925-21	MAGNET ASSY	
167	4-227-236-01	CHASSIS (CDM55C)	
M103	A-4672-984-A	MOTOR (LD) ASSY (LOADING)	

6-5. BASE UNIT SECTION (BU-K6BD37A)



Ref. No.	Part No.	Description	Remarks
201	4-985-672-01	SCREW (+PTPWHM2.6), FLOATING	
202	4-227-679-01	INSULATOR (213)	
⚠203	8-820-116-01	OPTICAL PICK-UP KSM-213DCP/Z-NP	
204	A-4725-001-A	BD BOARD, COMPLETE	
205	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
206	4-229-806-01	SPRING (213), COMPRESSION	
207	X-4953-169-1	HOLDER (BU) ASSY	
208	4-951-620-01	SCREW (2.6X8), +BVTP	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

SECTION 7
ELECTRICAL PARTS LIST

BACK PANEL **BD**

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- Abbreviation
  CND : Canadian model.
  G : German model.
  EA : Saudi Arabia model.
  AUS : Australian model.
  SP : Singapore model.
  MY : Malaysia model.
  AR : Argentine model.
  TH : Thai model.
  AED : North European model.
  MX : Mexican model.
  KR : Korean model.
- CAPACITORS:
  uF: µF
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remarks
		BACK PANEL BOARD			
		**********			
					(Supplied with MAIN board)
	1-533-293-11	FUSE HOLDER			
		< CAPACITOR >			
C101	1-162-282-31	CERAMIC	100PF	10%	50V
C102	1-162-282-31	CERAMIC	100PF	10%	50V
C103	1-104-665-11	ELECT	100uF	20.00%	10V
C105	1-164-159-11	CERAMIC	0.1uF		50V
C107	1-164-159-11	CERAMIC	0.1uF		50V
C108	1-164-159-11	CERAMIC	0.1uF		50V
C151	1-162-282-31	CERAMIC	100PF	10%	50V
C152	1-162-282-31	CERAMIC	100PF	10%	50V
		< CONNECTOR >			
CN1	1-774-108-11	PIN, CONNECTOR (PC BOARD)			
* CN2	1-564-687-11	PIN, CONNECTOR 3P			
CN101	1-784-735-11	CONNECTOR, FFC 13P			
		< FUSE >			
⚠F1	1-532-500-51	FUSE, CYLINDRICAL (TIME-LAG) 0.63A/250V			
		< IC >			
IC101	8-749-923-04	IC TOTX178 (CD DIGITAL OUT OPTICAL)			
		< JACK >			
J101	1-766-851-11	JACK, PIN 4P (MD/VIDEO(AUDIO))			
		< RESISTOR >			
R101	1-249-417-11	CARBON	1K	5%	1/4W F
R102	1-249-441-11	CARBON	100K	5%	1/4W
R151	1-249-417-11	CARBON	1K	5%	1/4W F
R152	1-249-441-11	CARBON	100K	5%	1/4W
		< SWITCH >			
⚠S1	1-762-753-11	SWITCH, VOLTAGE SELECTION			
					(VOLTAGE SELECTOR)
**********					

Ref. No.	Part No.	Description			Remarks
	A-4725-001-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C102	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C103	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C105	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C106	1-164-346-11	CERAMIC CHIP	1uF		16V
C107	1-164-346-11	CERAMIC CHIP	1uF		16V
C108	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C109	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C110	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C111	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C112	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C113	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V
C116	1-126-607-11	ELECT CHIP	47uF	20%	4V
C117	1-126-209-11	ELECT CHIP	100uF	20.00%	4V
C118	1-163-275-11	CERAMIC CHIP	0.001uF	5.00%	50V
C119	1-163-106-00	CERAMIC CHIP	36PF	5.00%	50V
C120	1-109-982-11	CERAMIC CHIP	1uF	10.00%	10V
C121	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C122	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C123	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C124	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C126	1-124-779-00	ELECT CHIP	10uF	20%	16V
C130	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C140	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C141	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C154	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C159	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C161	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C170	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C171	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C180	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C181	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C182	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C183	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C184	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C185	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C186	1-128-065-11	ELECT CHIP	68uF	20.00%	10V
C187	1-163-038-11	CERAMIC CHIP	0.1uF		25V

BD **LED** **LODAING** **MIC/PC MIX**

Ref. No.	Part No.	Description			Remarks
		< CONNECTOR >			
CN101	1-770-706-11	CONNECTOR, FFC/FPC 23P			
CN102	1-777-937-11	CONNECTOR, FFC/FPC 16P			
		< IC >			
IC101	8-752-397-42	IC CXD3008Q			
IC102	8-759-640-22	IC BA5982FM			
IC103	8-752-085-51	IC CXA2568M-T6			
IC104	8-759-325-67	IC TC7SH04F(TE85R)			
IC104	8-759-398-25	IC TC7SH04F(TE85L)			
		< COIL >			
L101	1-414-234-22	INDUCTOR	0uH		
L102	1-410-377-31	INDUCTOR CHIP	4.7uH		
		< TRANSISTOR >			
Q101	8-729-010-08	TRANSISTOR	MSB710-R		
Q101	8-729-049-31	TRANSISTOR	2SB710-RTX		
		< RESISTOR >			
R101	1-216-077-91	RES-CHIP	15K	5%	1/10W
R102	1-216-097-11	RES-CHIP	100K	5%	1/10W
R103	1-216-077-91	RES-CHIP	15K	5%	1/10W
R104	1-216-085-00	METAL CHIP	33K	5%	1/10W
R105	1-216-073-00	METAL CHIP	10K	5%	1/10W
R106	1-216-049-11	RES-CHIP	1K	5%	1/10W
R107	1-216-073-00	METAL CHIP	10K	5%	1/10W
R108	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R109	1-216-121-11	RES-CHIP	1M	5%	1/10W
R110	1-216-295-11	SHORT	0		
R112	1-216-025-11	RES-CHIP	100	5%	1/10W
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W
R124	1-216-097-11	RES-CHIP	100K	5%	1/10W
R125	1-216-033-00	METAL CHIP	220	5%	1/10W
R126	1-216-033-00	METAL CHIP	220	5%	1/10W
R127	1-216-033-00	METAL CHIP	220	5%	1/10W
R131	1-216-033-00	METAL CHIP	220	5%	1/10W
R135	1-216-295-11	SHORT	0		
R136	1-216-295-11	SHORT	0		
R137	1-216-295-11	SHORT	0		
R138	1-216-295-11	SHORT	0		
R143	1-216-103-00	METAL CHIP	180K	5%	1/10W
R144	1-216-103-00	METAL CHIP	180K	5%	1/10W
R145	1-216-121-11	RES-CHIP	1M	5%	1/10W
R146	1-216-121-11	RES-CHIP	1M	5%	1/10W
R147	1-216-041-00	METAL CHIP	470	5%	1/10W
R148	1-216-001-00	METAL CHIP	10	5%	1/10W
R149	1-216-003-11	RES-CHIP	12	5%	1/10W
R150	1-216-073-00	METAL CHIP	10K	5%	1/10W
R154	1-216-025-11	RES-CHIP	100	5%	1/10W
R155	1-216-025-11	RES-CHIP	100	5%	1/10W
R156	1-216-025-11	RES-CHIP	100	5%	1/10W
R157	1-216-025-11	RES-CHIP	100	5%	1/10W
R158	1-216-073-00	METAL CHIP	10K	5%	1/10W
R159	1-216-089-11	RES-CHIP	47K	5%	1/10W
R161	1-216-295-11	SHORT	0		
R162	1-216-101-00	METAL CHIP	150K	5%	1/10W
R171	1-216-025-11	RES-CHIP	100	5%	1/10W
R172	1-216-025-11	RES-CHIP	100	5%	1/10W
R173	1-216-025-11	RES-CHIP	100	5%	1/10W

Ref. No.	Part No.	Description			Remarks
R175	1-216-025-11	RES-CHIP	100	5%	1/10W
R180	1-216-097-11	RES-CHIP	100K	5%	1/10W
R181	1-216-100-00	RES-CHIP	130K	5%	1/10W
R182	1-216-081-00	METAL CHIP	22K	5%	1/10W
R183	1-216-081-00	METAL CHIP	22K	5%	1/10W
R184	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R185	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R186	1-216-081-00	METAL CHIP	22K	5%	1/10W
R187	1-216-081-00	METAL CHIP	22K	5%	1/10W
R188	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R189	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R190	1-216-081-00	METAL CHIP	22K	5%	1/10W
R191	1-216-081-00	METAL CHIP	22K	5%	1/10W
R192	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R193	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R194	1-216-295-11	SHORT	0		
R203	1-216-025-11	RES-CHIP	100	5%	1/10W
R204	1-216-025-11	RES-CHIP	100	5%	1/10W
R205	1-216-025-11	RES-CHIP	100	5%	1/10W
R206	1-216-295-11	SHORT	0		
		< SWITCH >			
S101	1-771-853-11	SWITCH, DETECTION (LIMIT)			
**********					
		LED BOARD			
		*********			
		(Supplied with MAIN board)			
		< DIODE >			
D803	8-719-071-41	DIODE SELS5923C-TP15			
D804	8-719-071-41	DIODE SELS5923C-TP15			
**********					
	1-674-336-21	LOADING BOARD			
		**********			
		(Supplied with MAIN board)			
		< CONNECTOR >			
* CN1	1-568-943-11	PIN, CONNECTOR 5P			
		< SWITCH >			
S1	1-771-799-11	SWITCH, LEVER (SLIDE)(LOADING)			
**********					
		MIC/PC MIX BOARD			
		**********			
		(Supplied with MAIN board)			
		< CAPACITOR >			
C701	1-162-294-31	CERAMIC	0.001uF	10%	50V
C702	1-162-294-31	CERAMIC	0.001uF	10%	50V
C703	1-164-159-11	CERAMIC	0.1uF		50V
C704	1-164-159-11	CERAMIC	0.1uF		50V
C705	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C706	1-124-257-00	ELECT	2.2uF	20%	50V
C707	1-162-294-31	CERAMIC	0.001uF	10%	50V
C708	1-162-294-31	CERAMIC	0.001uF	10%	50V
C709	1-162-302-11	CERAMIC	0.0022uF	20.00%	16V
C710	1-124-261-00	ELECT	10uF	20%	50V

Ref. No.	Part No.	Description			Remarks
C711	1-124-261-00	ELECT	10uF	20%	50V
C712	1-162-294-31	CERAMIC	0.001uF	10%	50V
C713	1-162-215-31	CERAMIC	47PF	5%	50V
C714	1-124-261-00	ELECT	10uF	20%	50V
C717	1-124-261-00	ELECT	10uF	20%	50V
C718	1-128-057-11	ELECT	330uF	20.00%	6.3V
C719	1-124-254-00	ELECT	0.68uF	20.00%	50V
C751	1-162-294-31	CERAMIC	0.001uF	10%	50V
		< IC >			
IC670	8-759-634-51	IC M5218AP			
IC670	8-759-710-59	IC NJM4580D-D			
		< JACK >			
J701	1-785-569-11	JACK (SMALL TYPE)(PHONES)			
J702	1-785-569-11	JACK (SMALL TYPE)(MIC)			
		< RESISTOR >			
R701	1-249-421-11	CARBON	2.2K	5%	1/4W F
R702	1-249-417-11	CARBON	1K	5%	1/4W F
R703	1-249-434-11	CARBON	27K	5%	1/4W
R704	1-249-417-11	CARBON	1K	5%	1/4W F
R705	1-249-434-11	CARBON	27K	5%	1/4W
R706	1-249-424-11	CARBON	3.9K	5%	1/4W F
R707	1-247-881-00	CARBON	120K	5%	1/4W
R708	1-247-807-31	CARBON	100	5%	1/4W
R709	1-249-417-11	CARBON	1K	5%	1/4W F
R710	1-249-417-11	CARBON	1K	5%	1/4W F
R711	1-249-429-11	CARBON	10K	5%	1/4W
		< VARIABLE RESISTOR >			
RV701	1-225-739-11	RES, VAR CARBON 50K (MIC VOL)			
**********					
	A-4475-307-A	MAIN BOARD, COMPLETE			
		**********			
	7-682-148-01	SCREW+P 3X8			
		< CAPACITOR >			
C2	1-136-165-00	FILM0.1uF	5.00%		50V
C3	1-136-165-00	FILM0.1uF	5.00%		50V
C4	1-128-548-11	ELECT	4700uF	20.00%	25V
C5	1-126-948-11	ELECT	100uF	20.00%	35V
C6	1-161-494-00	CERAMIC	0.022uF		25V
C7	1-126-933-11	ELECT	100uF	20.00%	16V
C8	1-136-165-00	FILM0.1uF	5.00%		50V
C9	1-136-165-00	FILM0.1uF	5.00%		50V
C10	1-126-768-11	ELECT	2200uF	20.00%	16V
C11	1-104-665-11	ELECT	100uF	20.00%	25V
C12	1-104-664-11	ELECT	47uF	20.00%	25V
C13	1-161-494-00	CERAMIC	0.022uF		25V
C15	1-104-664-11	ELECT	47uF	20.00%	25V
C16	1-128-551-11	ELECT	22uF	20.00%	25V
C17	1-104-664-11	ELECT	47uF	20.00%	25V
C18	1-128-551-11	ELECT	22uF	20.00%	25V
C19	1-126-965-11	ELECT	22uF	20.00%	50V
C20	1-126-965-11	ELECT	22uF	20.00%	50V
C21	1-126-967-11	ELECT	47uF	20.00%	50V
C22	1-164-159-11	CERAMIC	0.1uF		50V

Ref. No.	Part No.	Description			Remarks
C23	1-126-951-11	ELECT	470uF	20.00%	35V
C27	1-126-767-11	ELECT	1000uF	20.00%	16V
C28	1-128-551-11	ELECT	22uF	20.00%	25V
C29	1-126-967-11	ELECT	47uF	20.00%	50V
C30	1-164-159-11	CERAMIC	0.1uF		50V
C54	1-128-548-11	ELECT	4700uF	20.00%	25V
C201	1-126-964-11	ELECT	10uF	20.00%	50V
C202	1-136-172-00	MYLAR	0.39uF	5.00%	50V
C203	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C204	1-130-476-00	MYLAR	0.0027uF	5%	50V
C205	1-126-960-11	ELECT	1uF	20.00%	50V
C206	1-126-964-11	ELECT	10uF	20.00%	50V
C207	1-126-963-11	ELECT	4.7uF	20.00%	50V
C208	1-162-294-31	CERAMIC	0.001uF	10%	50V
C209	1-126-935-11	ELECT	470uF	20.00%	16V
C210	1-161-494-00	CERAMIC	0.022uF		25V
C211	1-128-551-11	ELECT	22uF	20.00%	25V
C212	1-126-964-11	ELECT	10uF	20.00%	50V
C214	1-107-715-11	ELECT	22uF	20.00%	16V
C215	1-126-963-11	ELECT	4.7uF	20.00%	50V
C216	1-126-963-11	ELECT	4.7uF	20.00%	50V
C217	1-126-963-11	ELECT	4.7uF	20.00%	50V
C218	1-126-964-11	ELECT	10uF	20.00%	50V
C219	1-126-964-11	ELECT	10uF	20.00%	50V
C221	1-162-290-31	CERAMIC	470PF	10%	50V
C251	1-126-964-11	ELECT	10uF	20.00%	50V
C252	1-136-172-00	MYLAR	0.39uF	5.00%	50V
C253	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C254	1-130-476-00	MYLAR	0.0027uF	5%	50V
C255	1-126-960-11	ELECT	1uF	20.00%	50V
C256	1-126-964-11	ELECT	10uF	20.00%	50V
C257	1-126-963-11	ELECT	4.7uF	20.00%	50V
C265	1-126-963-11	ELECT	4.7uF	20.00%	50V
C266	1-126-963-11	ELECT	4.7uF	20.00%	50V
C267	1-126-963-11	ELECT	4.7uF	20.00%	50V
C268	1-126-964-11	ELECT	10uF	20.00%	50V
C269	1-126-964-11	ELECT	10uF	20.00%	50V
C271	1-162-290-31	CERAMIC	470PF	10%	50V
C302	1-161-494-00	CERAMIC	0.022uF		25V
C303	1-126-047-71	ELECT	4.7uF	20.00%	50V
C305	1-126-022-11	ELECT	47uF	20.00%	25V
C306	1-162-285-31	CERAMIC	180PF	10%	50V
C307	1-164-159-11	CERAMIC	0.1uF		50V
C308	1-164-159-11	CERAMIC	0.1uF		50V
C309	1-164-159-11	CERAMIC	0.1uF		50V
C310	1-164-159-11	CERAMIC	0.1uF		50V
C314	1-162-219-31	CERAMIC	68PF	5.00%	50V
C321	1-125-972-91	ELECT	100uF	20.00%	16V
C322	1-124-589-11	ELECT	47uF	20%	16V
C323	1-164-159-11	CERAMIC	0.1uF		50V
C352	1-161-494-00	CERAMIC	0.022uF		25V
C353	1-126-047-71	ELECT	4.7uF	20.00%	50V
C355	1-126-022-11	ELECT	47uF	20.00%	25V
C356	1-162-285-31	CERAMIC	180PF	10%	50V
C357	1-164-159-11	CERAMIC	0.1uF		50V
C358	1-164-159-11	CERAMIC	0.1uF		50V
C359	1-164-159-11	CERAMIC	0.1uF		50V
C360	1-164-159-11	CERAMIC	0.1uF		50V
C364	1-162-219-31	CERAMIC	68PF	5.00%	50V
C411	1-126-935-11	ELECT	470uF	20.00%	6.3V

MAIN

Ref. No.	Part No.	Description			Remarks
C415	1-164-159-11	CERAMIC	0.1uF		50V
C417	1-126-917-11	ELECT	3300uF	20.00%	6.3V
C418	1-126-928-11	ELECT	3300uF	20.00%	10V
C419	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C431	1-126-935-11	ELECT	470uF	20.00%	16V
C501	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C502	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C503	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C504	1-126-933-11	ELECT	100uF	20.00%	16V
C507	1-126-933-11	ELECT	100uF	20.00%	16V
C551	1-128-836-51	ELECT	2200uF	20%	10V
C552	1-104-664-11	ELECT	47uF	20.00%	16V
C553	1-164-159-11	CERAMIC	0.1uF		50V
C554	1-104-664-11	ELECT	47uF	20.00%	16V
C555	1-164-159-11	CERAMIC	0.1uF		50V
C556	1-164-159-11	CERAMIC	0.1uF		50V
C558	1-126-961-11	ELECT	2.2uF	20.00%	50V
C601	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C602	1-162-205-31	CERAMIC	18PF	5%	50V
C603	1-162-205-31	CERAMIC	18PF	5%	50V
C604	1-161-494-00	CERAMIC	0.022uF		25V
C605	1-161-494-00	CERAMIC	0.022uF		25V
C606	1-161-494-00	CERAMIC	0.022uF		25V
C607	1-161-494-00	CERAMIC	0.022uF		25V
C608	1-162-282-31	CERAMIC	100PF	10%	50V
C609	1-162-282-31	CERAMIC	100PF	10%	50V
C610	1-162-282-31	CERAMIC	100PF	10%	50V
C611	1-126-934-11	ELECT	220uF	20.00%	10V
C612	1-126-916-11	ELECT	1000uF	20.00%	6.3V
C613	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
* CN4	1-564-510-11	PLUG, CONNECTOR 7P			
CN201	1-784-774-11	CONNECTOR, FFC 13P			
* CN202	1-568-934-11	PIN, CONNECTOR 7P			
CN401	1-784-774-11	CONNECTOR, FFC 13P			
CN421	1-784-774-11	CONNECTOR, FFC 13P			
CN441	1-784-784-11	CONNECTOR, FFC 23P			
* CN601	1-764-333-11	PLUG, CONNECTOR 10P			
		< DIODE >			
D2	8-719-500-56	DIODE	D3SBA20		
D3	8-719-935-69	DIODE	HZS11B1LTD		
D4	8-719-200-82	DIODE	11ES2		
D5	8-719-200-82	DIODE	11ES2		
D6	8-719-975-85	DIODE	ERB83-004		
D7	8-719-975-85	DIODE	ERB83-004		
D8	8-719-975-85	DIODE	ERB83-004		
D9	8-719-975-85	DIODE	ERB83-004		
D10	8-719-933-35	DIODE	HZS6A3L		
D14	8-719-200-82	DIODE	11ES2		
D15	8-719-200-82	DIODE	11ES2		
D16	8-719-933-35	DIODE	HZS6A3L		
D21	8-719-200-82	DIODE	11ES2		
D321	8-719-911-19	DIODE	1SS119		
D501	8-719-109-85	DIODE	RD5.1ES-B2		
D551	8-719-911-19	DIODE	1SS119		
D552	8-719-911-19	DIODE	1SS119		
D553	8-719-911-19	DIODE	1SS119		
D554	8-719-911-19	DIODE	1SS119		
D555	8-719-911-19	DIODE	1SS119		

Ref. No.	Part No.	Description				
D556	8-719-911-19	DIODE	1SS119			
D601	8-719-911-19	DIODE	1SS119			
		< GROUND >				
EPT1	1-537-770-21	TERMINAL BOARD, GROUND				
EPT2	1-537-770-21	TERMINAL BOARD, GROUND				
		< IC >				
IC1	8-759-039-69	IC	uPC7805AHF			
IC2	8-759-450-49	IC	BA07T			
IC3	8-759-633-42	IC	M5293L			
IC4	8-759-450-47	IC	BA05T			
IC201	8-759-669-03	IC	IC LC75342			
IC202	8-759-634-51	IC	M5218AP			
IC301	8-759-333-24	IC	LM1876TF			
IC501	8-759-822-09	IC	LB1641			
IC551	8-759-635-63	IC	M51943BSL			
IC601	8-759-830-99	IC	M30622MAA-B04FP			
		< JACK >				
J301	1-694-677-11	TERMINAL BOARD (4P)(SPEAKER)				
		< COIL >				
L301	1-420-872-00	COIL, AIR-CORE				
L351	1-420-872-00	COIL, AIR-CORE				
L412	1-402-786-11	INDUCTOR	100uH			
		< IC LINK >				
⚠ PS1	1-806-881-11	THERMISTOR, POSITIVE 2.2				
⚠ PS4	1-202-854-00	THERMISTOR, POSITIVE				
		< TRANSISTOR >				
Q1	8-729-026-68	TRANSISTOR	2SD2525(TP)			
Q2	8-729-021-82	TRANSISTOR	2SD2396K			
Q3	8-729-620-05	TRANSISTOR	2SC2603-EF			
Q4	8-729-900-80	TRANSISTOR	DTC114ES			
Q201	8-729-141-30	TRANSISTOR	2SC3623A-LK			
Q202	8-729-422-57	TRANSISTOR	UN4111			
Q203	8-729-422-57	TRANSISTOR	UN4111			
Q204	8-729-141-30	TRANSISTOR	2SC3623A-LK			
Q251	8-729-141-30	TRANSISTOR	2SC3623A-LK			
Q254	8-729-141-30	TRANSISTOR	2SC3623A-LK			
Q322	8-729-620-05	TRANSISTOR	2SC2603-EF			
Q323	8-729-620-05	TRANSISTOR	2SC2603-EF			
Q324	8-729-620-05	TRANSISTOR	2SC2603-EF			
Q551	8-729-620-05	TRANSISTOR	2SC2603-EF			
		< RESISTOR >				
R2	1-247-843-11	CARBON	3.3K	5%	1/4W	
R3	1-247-843-11	CARBON	3.3K	5%	1/4W	
R4	1-249-411-11	CARBON	330	5%	1/4W	
R5	1-249-417-11	CARBON	1K	5%	1/4W	F
R6	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R7	1-249-437-11	CARBON	47K	5%	1/4W	
R8	1-247-807-31	CARBON	100	5%	1/4W	
R9	1-247-807-31	CARBON	100	5%	1/4W	
⚠ R10	1-240-877-11	FUSIBLE	0.15	5%	1/2W	
R201	1-249-424-11	CARBON	3.9K	5%	1/4W	F

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remarks
R202	1-247-807-31	CARBON	100	5%	1/4W
R203	1-247-807-31	CARBON	100	5%	1/4W
R204	1-247-807-31	CARBON	100	5%	1/4W
R205	1-249-417-11	CARBON	1K	5%	1/4W F
R206	1-249-417-11	CARBON	1K	5%	1/4W F
R207	1-249-429-11	CARBON	10K	5%	1/4W
R208	1-249-430-11	CARBON	12K	5%	1/4W
R209	1-249-421-11	CARBON	2.2K	5%	1/4W F
R210	1-249-441-11	CARBON	100K	5%	1/4W
R211	1-249-425-11	CARBON	4.7K	5%	1/4W F
R212	1-249-425-11	CARBON	4.7K	5%	1/4W F
R213	1-247-843-11	CARBON	3.3K	5%	1/4W
R214	1-249-429-11	CARBON	10K	5%	1/4W
R215	1-249-430-11	CARBON	12K	5%	1/4W
R216	1-249-417-11	CARBON	1K	5%	1/4W F
R217	1-249-417-11	CARBON	1K	5%	1/4W F
R218	1-249-425-11	CARBON	4.7K	5%	1/4W F
R219	1-249-425-11	CARBON	4.7K	5%	1/4W F
R220	1-247-843-11	CARBON	3.3K	5%	1/4W
R221	1-249-417-11	CARBON	1K	5%	1/4W F
R222	1-249-437-11	CARBON	47K	5%	1/4W
R223	1-249-429-11	CARBON	10K	5%	1/4W
R224	1-249-429-11	CARBON	10K	5%	1/4W
R225	1-249-441-11	CARBON	100K	5%	1/4W
R226	1-249-441-11	CARBON	100K	5%	1/4W
R251	1-249-424-11	CARBON	3.9K	5%	1/4W F
R257	1-249-429-11	CARBON	10K	5%	1/4W
R258	1-249-430-11	CARBON	12K	5%	1/4W
R259	1-249-421-11	CARBON	2.2K	5%	1/4W F
R260	1-249-441-11	CARBON	100K	5%	1/4W
R261	1-249-425-11	CARBON	4.7K	5%	1/4W F
R264	1-249-429-11	CARBON	10K	5%	1/4W
R265	1-249-430-11	CARBON	12K	5%	1/4W
R267	1-249-417-11	CARBON	1K	5%	1/4W F
R268	1-249-425-11	CARBON	4.7K	5%	1/4W F
R272	1-249-437-11	CARBON	47K	5%	1/4W
R273	1-249-429-11	CARBON	10K	5%	1/4W
R274	1-249-429-11	CARBON	10K	5%	1/4W
R301	1-249-417-11	CARBON	1K	5%	1/4W F
R302	1-249-433-11	CARBON	22K	5%	1/4W
R303	1-249-417-11	CARBON	1K	5%	1/4W F
R304	1-249-433-11	CARBON	22K	5%	1/4W
R305	1-249-393-11	CARBON	10	5%	1/4W F
R306	1-260-091-11	CARBON	220	5%	1/2W
R307	1-249-437-11	CARBON	47K	5%	1/4W
R308	1-260-076-11	CARBON	10	5%	1/2W
R309	1-249-393-11	CARBON	10	5%	1/4W F
R321	1-249-441-11	CARBON	100K	5%	1/4W
R322	1-249-438-11	CARBON	56K	5%	1/4W
R323	1-260-319-51	CARBON	180	5%	1/2W
R351	1-249-417-11	CARBON	1K	5%	1/4W F
R352	1-249-433-11	CARBON	22K	5%	1/4W
R353	1-249-417-11	CARBON	1K	5%	1/4W F
R354	1-249-433-11	CARBON	22K	5%	1/4W
R355	1-249-393-11	CARBON	10	5%	1/4W F
R356	1-260-091-11	CARBON	220	5%	1/2W
R357	1-249-438-11	CARBON	56K	5%	1/4W
R358	1-260-076-11	CARBON	10	5%	1/2W
R359	1-249-393-11	CARBON	10	5%	1/4W F
R401	1-249-417-11	CARBON	1K	5%	1/4W F

Ref. No.	Part No.	Description			Remarks
R402	1-249-429-11	CARBON	10K	5%	1/4W
R403	1-247-807-31	CARBON	100	5%	1/4W
R411	1-249-435-11	CARBON	33K	5%	1/4W
R421	1-249-417-11	CARBON	1K	5%	1/4W F
R422	1-249-437-11	CARBON	47K	5%	1/4W
R451	1-249-417-11	CARBON	1K	5%	1/4W F
R452	1-249-429-11	CARBON	10K	5%	1/4W
R471	1-249-417-11	CARBON	1K	5%	1/4W F
R472	1-249-437-11	CARBON	47K	5%	1/4W
R501	1-247-807-31	CARBON	100	5%	1/4W
R551	1-247-807-31	CARBON	100	5%	1/4W
R552	1-249-413-11	CARBON	470	5%	1/4W F
R553	1-249-425-11	CARBON	4.7K	5%	1/4W F
R554	1-249-437-11	CARBON	47K	5%	1/4W
R555	1-249-437-11	CARBON	47K	5%	1/4W
R556	1-249-429-11	CARBON	10K	5%	1/4W
R557	1-249-425-11	CARBON	4.7K	5%	1/4W F
R558	1-249-425-11	CARBON	4.7K	5%	1/4W F
R559	1-249-417-11	CARBON	1K	5%	1/4W F
R560	1-249-417-11	CARBON	1K	5%	1/4W F
R561	1-249-421-11	CARBON	2.2K	5%	1/4W F
R603	1-249-417-11	CARBON	1K	5%	1/4W F
R604	1-249-417-11	CARBON	1K	5%	1/4W F
R605	1-249-429-11	CARBON	10K	5%	1/4W
R606	1-247-891-00	CARBON	330K	5%	1/4W
R607	1-249-429-11	CARBON	10K	5%	1/4W
R609	1-249-417-11	CARBON	1K	5%	1/4W F
R610	1-249-417-11	CARBON	1K	5%	1/4W F
R611	1-249-417-11	CARBON	1K	5%	1/4W F
R612	1-249-417-11	CARBON	1K	5%	1/4W F
R614	1-249-417-11	CARBON	1K	5%	1/4W F
R615	1-249-417-11	CARBON	1K	5%	1/4W F
R617	1-249-417-11	CARBON	1K	5%	1/4W F
R618	1-249-429-11	CARBON	10K	5%	1/4W
R620	1-249-421-11	CARBON	2.2K	5%	1/4W F
R621	1-249-421-11	CARBON	2.2K	5%	1/4W F
R624	1-247-807-31	CARBON	100	5%	1/4W
R625	1-247-807-31	CARBON	100	5%	1/4W
R626	1-247-807-31	CARBON	100	5%	1/4W
R627	1-247-807-31	CARBON	100	5%	1/4W
R629	1-249-417-11	CARBON	1K	5%	1/4W F
R630	1-249-417-11	CARBON	1K	5%	1/4W F
R631	1-247-807-31	CARBON	100	5%	1/4W
R632	1-247-807-31	CARBON	100	5%	1/4W
R634	1-249-413-11	CARBON	470	5%	1/4W F
R635	1-249-413-11	CARBON	470	5%	1/4W F
R638	1-247-807-31	CARBON	100	5%	1/4W
R639	1-249-417-11	CARBON	1K	5%	1/4W F
R640	1-247-843-11	CARBON	3.3K	5%	1/4W
R641	1-249-417-11	CARBON	1K	5%	1/4W F
R642	1-249-429-11	CARBON	10K	5%	1/4W
R643	1-247-807-31	CARBON	100	5%	1/4W
R644	1-247-807-31	CARBON	100	5%	1/4W
R645	1-249-417-11	CARBON	1K	5%	1/4W F
R646	1-247-807-31	CARBON	100	5%	1/4W
R650	1-247-807-31	CARBON	100	5%	1/4W
R651	1-249-425-11	CARBON	4.7K	5%	1/4W F
R652	1-249-433-11	CARBON	22K	5%	1/4W
R655	1-247-807-31	CARBON	100	5%	1/4W
R656	1-247-807-31	CARBON	100	5%	1/4W

MAIN PANEL

Ref. No.	Part No.	Description			Remarks
R659	1-249-417-11	CARBON	1K	5%	1/4W F
R660	1-249-417-11	CARBON	1K	5%	1/4W F
R672	1-249-417-11	CARBON	1K	5%	1/4W F
R673	1-249-429-11	CARBON	10K	5%	1/4W
R674	1-249-417-11	CARBON	1K	5%	1/4W F
R675	1-249-429-11	CARBON	10K	5%	1/4W
R676	1-249-417-11	CARBON	1K	5%	1/4W F
R677	1-249-417-11	CARBON	1K	5%	1/4W F
R678	1-249-427-11	CARBON	6.8K	5%	1/4W F
R679	1-249-417-11	CARBON	1K	5%	1/4W F
R680	1-249-427-11	CARBON	6.8K	5%	1/4W F
R681	1-249-417-11	CARBON	1K	5%	1/4W F
R682	1-249-427-11	CARBON	6.8K	5%	1/4W F
R683	1-249-429-11	CARBON	10K	5%	1/4W
R687	1-249-411-11	CARBON	330	5%	1/4W
R688	1-249-425-11	CARBON	4.7K	5%	1/4W F
R689	1-249-429-11	CARBON	10K	5%	1/4W
R690	1-249-429-11	CARBON	10K	5%	1/4W
R691	1-249-429-11	CARBON	10K	5%	1/4W
R692	1-249-429-11	CARBON	10K	5%	1/4W
R693	1-249-429-11	CARBON	10K	5%	1/4W
R694	1-249-429-11	CARBON	10K	5%	1/4W
R695	1-249-429-11	CARBON	10K	5%	1/4W
R696	1-249-429-11	CARBON	10K	5%	1/4W
R819	1-249-409-11	CARBON	220	5%	1/4W F
R820	1-249-409-11	CARBON	220	5%	1/4W F
		< RELAY >			
RY301	1-755-170-11	RELAY (12V)			
		< VIBRATOR >			
X601	1-567-098-41	VIBRATOR, CRYSTAL 32.768kHz			
X602	1-781-107-21	VIBRATOR, SERAMIC 16MHz			

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		PANEL BOARD			
		**********			
		(Supplied with MAIN board)			
	4-212-590-22	HOLDER(FL)			
*	4-949-935-51	CUSHION (FL)			
		< CAPACITOR >			
C801	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C802	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C803	1-124-589-11	ELECT	47uF	20%	16V
C804	1-161-494-00	CERAMIC	0.022uF		25V
C808	1-164-159-11	CERAMIC	0.1uF		50V
C809	1-162-294-31	CERAMIC	0.001uF	10%	50V
C810	1-162-294-31	CERAMIC	0.001uF	10%	50V
C811	1-162-294-31	CERAMIC	0.001uF	10%	50V
C812	1-161-494-00	CERAMIC	0.022uF		25V
C813	1-162-215-31	CERAMIC	47PF	5%	50V
C814	1-161-494-00	CERAMIC	0.022uF		25V
C815	1-162-290-31	CERAMIC	470PF	10%	50V
C816	1-128-131-11	ELECT	22uF	20.00%	50V
C817	1-161-494-00	CERAMIC	0.022uF		25V

Ref. No.	Part No.	Description			Remarks
		< CONNECTOR >			
CN801	1-784-745-11	CONNECTOR, FFC 23P			
		< DIODE >			
D801	8-719-812-44	DIODE TLO124 (PBC)			
D802	8-719-812-44	DIODE TLO124 (VCD)			
D805	8-719-032-86	DIODE SEL5420E (◴)			
D806	8-719-812-44	DIODE TLO124 (I/⏻)			
		< FILTER >			
FL801	1-517-805-12	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC801	8-759-459-85	IC NJL63H400A			
IC802	8-759-426-98	IC MSM9202-02GS-K			
		< TRANSISTOR >			
Q801	8-729-900-80	TRANSISTOR	DTC114ES		
Q802	8-729-900-80	TRANSISTOR	DTC114ES		
Q804	8-729-900-80	TRANSISTOR	DTC114ES		
Q805	8-729-900-80	TRANSISTOR	DTC114ES		
Q806	8-729-900-80	TRANSISTOR	DTC114ES		
Q807	8-729-900-80	TRANSISTOR	DTC114ES		
		< RESISTOR >			
R801	1-247-807-31	CARBON	100	5%	1/4W
R802	1-247-807-31	CARBON	100	5%	1/4W
R803	1-247-807-31	CARBON	100	5%	1/4W
R805	1-247-807-31	CARBON	100	5%	1/4W
R806	1-247-807-31	CARBON	100	5%	1/4W
R807	1-249-415-11	CARBON	680	5%	1/4W F
R808	1-249-417-11	CARBON	1K	5%	1/4W F
R809	1-249-419-11	CARBON	1.5K	5%	1/4W F
R810	1-247-843-11	CARBON	3.3K	5%	1/4W
R811	1-249-415-11	CARBON	680	5%	1/4W F
R812	1-249-417-11	CARBON	1K	5%	1/4W F
R813	1-249-419-11	CARBON	1.5K	5%	1/4W F
R814	1-247-843-11	CARBON	3.3K	5%	1/4W
R815	1-249-415-11	CARBON	680	5%	1/4W F
R816	1-249-417-11	CARBON	1K	5%	1/4W F
R817	1-249-415-11	CARBON	680	5%	1/4W F
R818	1-249-415-11	CARBON	680	5%	1/4W F
R821	1-247-807-31	CARBON	100	5%	1/4W
R822	1-247-807-31	CARBON	100	5%	1/4W
R823	1-247-807-31	CARBON	100	5%	1/4W
R824	1-247-807-31	CARBON	100	5%	1/4W
R825	1-247-843-11	CARBON	3.3K	5%	1/4W
R826	1-249-437-11	CARBON	47K	5%	1/4W
R827	1-249-415-11	CARBON	680	5%	1/4W F
R828	1-249-415-11	CARBON	680	5%	1/4W F
R829	1-249-401-11	CARBON	47	5%	1/4W F

Ref. No.	Part No.	Description			Remarks
		< SWITCH >			
S801	1-418-632-11	ENCODER, ROTARY(VOLUME)			
S802	1-771-410-21	SWITCH, TACTILE(⏏)			
S803	1-771-410-21	SWITCH, TACTILE(▷▷ ▷▷⏸)			
S804	1-771-410-21	SWITCH, TACTILE(□)			
S805	1-771-410-21	SWITCH, TACTILE(⏮◁◁ ◁◁)			
S806	1-771-410-21	SWITCH, TACTILE(NEXT)			
S807	1-771-410-21	SWITCH, TACTILE(FUNCTION)			
S808	1-771-410-21	SWITCH, TACTILE(▷⏸)			
S809	1-771-410-21	SWITCH, TACTILE(TUNER/BAND)			
S810	1-771-410-21	SWITCH, TACTILE(RETURN)			
S811	1-771-410-21	SWITCH, TACTILE(SELECT)			
S812	1-771-410-21	SWITCH, TACTILE(I/⏻)			
S813	1-771-410-21	SWITCH, TACTILE(DISPLAY)			
S814	1-771-410-21	SWITCH, TACTILE(PREV)			
**********					
	A-4725-499-A	VIDEO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C102	1-163-143-00	CERAMIC CHIP	0.0012uF	5%	50V
C103	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C201	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C202	1-163-143-00	CERAMIC CHIP	0.0012uF	5%	50V
C203	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C304	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C305	1-163-235-11	CERAMIC CHIP	22PF	5.00%	50V
C306	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C307	1-163-235-11	CERAMIC CHIP	22PF	5.00%	50V
C308	1-163-263-11	CERAMIC CHIP	330PF	5.00%	50V
C309	1-163-263-11	CERAMIC CHIP	330PF	5.00%	50V
C310	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C311	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C312	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C313	1-163-259-91	CERAMIC CHIP	220PF	5.00%	50V
C314	1-163-235-11	CERAMIC CHIP	22PF	5.00%	50V
C315	1-163-255-11	CERAMIC CHIP	150PF	5.00%	50V
C316	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C317	1-126-193-11	ELECT	1uF	20%	50V
C318	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C319	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C320	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C321	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C322	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C323	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C324	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C325	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C401	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C402	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C504	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C505	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C506	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C507	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C508	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C509	1-163-275-11	CERAMIC CHIP	0.001uF	5.00%	50V
C510	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C531	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C532	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C535	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C536	1-126-193-11	ELECT	1uF	20%	50V
C537	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C539	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C540	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C541	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C542	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C543	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C544	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C545	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C546	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C547	1-126-193-11	ELECT	1uF	20%	50V
C548	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C549	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C550	1-163-275-11	CERAMIC CHIP	0.001uF	5.00%	50V
C551	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C552	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C553	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C555	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C556	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C559	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C561	1-163-089-00	CERAMIC CHIP	6PF		50V
C563	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C564	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C565	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C566	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C568	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C569	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C570	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C571	1-128-065-11	ELECT CHIP	68uF	20.00%	10V
C573	1-163-235-11	CERAMIC CHIP	22PF	5.00%	50V
C574	1-163-235-11	CERAMIC CHIP	22PF	5.00%	50V
C576	1-163-235-11	CERAMIC CHIP	22PF	5.00%	50V
C577	1-163-235-11	CERAMIC CHIP	22PF	5.00%	50V
		< CONNECTOR >			
CN501	1-779-343-21	CONNECTOR, FFC/FPC 23P			
CN502	1-779-416-11	CONNECTOR,FFC(LIF(NON-ZIF))13P			
		< TRIMMER >			
CT503	1-141-539-11	CAP, ADJ 10PF			
		< DIODE >			
D501	8-719-422-12	DIODE MA8039			
		< IC >			
IC101	8-759-701-40	IC NJM3404AM-T1			
IC301	8-759-530-30	IC TC74VHCU04FT(EL)			
IC302	8-759-662-94	IC NJM2255M(TE2)			
IC303	8-759-711-47	IC NJM2209M			
IC304	8-759-662-95	IC BA7665FS-E2			

VIDEO

Ref. No.	Part No.	Description			Remarks
IC501	8-759-530-30	IC TC74VHCU04FT(EL)			
IC502	8-759-672-45	IC M30620MCA-A45FP			
IC504	8-759-530-30	IC TC74VHCU04FT(EL)			
IC505	8-759-535-48	IC CL680T-D1			
IC506	8-759-677-67	IC LC372100PM-K98-TLA			
IC506	8-759-677-67	IC LC372100PM-K98-TLA			
IC506	8-759-677-67	IC LC372100PM-K98-TLA			
IC506	8-759-677-67	IC LC372100PM-K98-TLA			
IC506	8-759-677-67	IC LC372100PM-K98-TLA			
IC507	8-759-342-01	IC MB814260-70PJER			
IC507	8-759-342-01	IC MB814260-70PJER			
IC509	8-759-535-62	IC PCM1727E-2/T2			
		< JACK >			
J301	1-537-943-11	TERMINAL, S (S VIDEO OUT)			
J302	1-774-227-11	JACK, PIN 1P (VIDEO OUT)			
		< JUMPER RESISTOR >			
JW101	1-216-295-11	SHORT	0		
JW201	1-216-295-11	SHORT	0		
JW301	1-216-295-11	SHORT	0		
JW302	1-216-025-11	RES-CHIP	100	5%	1/10W
JW304	1-216-295-11	SHORT	0		
JW413	1-216-295-11	SHORT	0		
JW502	1-216-295-11	SHORT	0		
JW504	1-216-295-11	SHORT	0		
JW505	1-216-295-11	SHORT	0		
JW513	1-216-295-11	SHORT	0		
		< COIL >			
L301	1-410-372-21	INDUCTOR	1.8uH		
L302	1-410-372-21	INDUCTOR	1.8uH		
L303	1-410-658-31	INDUCTOR CHIP	220uH		
L501	1-216-296-91	SHORT	0		
L502	1-216-296-91	SHORT	0		
L504	1-410-375-11	INDUCTOR CHIP	3.3uH		
L505	1-216-296-91	SHORT	0		
L506	1-216-296-91	SHORT	0		
L507	1-216-296-91	SHORT	0		
L508	1-216-296-91	SHORT	0		
L509	1-216-296-91	SHORT	0		
L510	1-216-296-91	SHORT	0		
L511	1-469-145-21	FERRITE	0uH		
L511	1-469-705-21	INDUCTOR	0uH		
L512	1-469-145-21	FERRITE	0uH		
L512	1-469-705-21	INDUCTOR	0uH		
L513	1-469-145-21	FERRITE	0uH		
L513	1-469-705-21	INDUCTOR	0uH		
		< TRANSISTOR >			
Q501	8-729-900-53	TRANSISTOR	DTC114EK		
Q502	8-729-900-53	TRANSISTOR	DTC114EK		
Q531	8-729-140-75	TRANSISTOR	2SD999-CLCK		
		< RESISTOR >			
R101	1-216-073-00	METAL CHIP	10K	5%	1/10W
R102	1-208-441-61	RES-CHIP	1.5K	2%	1/10W
R103	1-208-441-61	RES-CHIP	1.5K	2%	1/10W
R201	1-216-073-00	METAL CHIP	10K	5%	1/10W
R202	1-208-441-61	RES-CHIP	1.5K	2%	1/10W

Ref. No.	Part No.	Description			Remarks
R203	1-208-441-61	RES-CHIP	1.5K	2%	1/10W
R302	1-216-624-11	METAL CHIP	75	0.5%	1/10W
R303	1-216-624-11	METAL CHIP	75	0.5%	1/10W
R306	1-216-624-11	METAL CHIP	75	0.5%	1/10W
R308	1-216-073-00	METAL CHIP	10K	5%	1/10W
R309	1-216-073-00	METAL CHIP	10K	5%	1/10W
R310	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R311	1-216-029-00	METAL CHIP	150	5%	1/10W
R312	1-216-073-00	METAL CHIP	10K	5%	1/10W
R313	1-216-073-00	METAL CHIP	10K	5%	1/10W
R314	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R315	1-216-022-00	METAL CHIP	75	5%	1/10W
R316	1-216-022-00	METAL CHIP	75	5%	1/10W
R317	1-216-022-00	METAL CHIP	75	5%	1/10W
R318	1-216-295-11	SHORT	0		
R319	1-216-624-11	METAL CHIP	75	0.5%	1/10W
R320	1-216-295-11	SHORT	0		
R403	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R404	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R501	1-216-025-11	RES-CHIP	100	5%	1/10W
R502	1-216-025-11	RES-CHIP	100	5%	1/10W
R503	1-216-025-11	RES-CHIP	100	5%	1/10W
R504	1-216-025-11	RES-CHIP	100	5%	1/10W
R505	1-216-025-11	RES-CHIP	100	5%	1/10W
R506	1-216-025-11	RES-CHIP	100	5%	1/10W
R507	1-216-073-00	METAL CHIP	10K	5%	1/10W
R508	1-216-073-00	METAL CHIP	10K	5%	1/10W
R516	1-216-073-00	METAL CHIP	10K	5%	1/10W
R517	1-216-073-00	METAL CHIP	10K	5%	1/10W
R518	1-216-073-00	METAL CHIP	10K	5%	1/10W
R519	1-216-025-11	RES-CHIP	100	5%	1/10W
R520	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R521	1-216-073-00	METAL CHIP	10K	5%	1/10W
R523	1-216-013-00	METAL CHIP	33	5%	1/10W
R530	1-216-025-11	RES-CHIP	100	5%	1/10W
R531	1-216-025-11	RES-CHIP	100	5%	1/10W
R532	1-216-295-11	SHORT	0		
R533	1-216-295-11	SHORT	0		
R534	1-216-073-00	METAL CHIP	10K	5%	1/10W
R535	1-216-073-00	METAL CHIP	10K	5%	1/10W
R536	1-216-033-00	METAL CHIP	220	5%	1/10W
R537	1-216-025-11	RES-CHIP	100	5%	1/10W
R538	1-216-073-00	METAL CHIP	10K	5%	1/10W
R539	1-216-295-11	SHORT	0		
R540	1-216-295-11	SHORT	0		
R542	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R543	1-216-685-11	METAL CHIP	27K	0.5%	1/10W
R544	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R545	1-216-025-11	RES-CHIP	100	5%	1/10W
R546	1-216-049-11	RES-CHIP	1K	5%	1/10W
R548	1-216-049-11	RES-CHIP	1K	5%	1/10W
R549	1-216-025-11	RES-CHIP	100	5%	1/10W
R550	1-216-025-11	RES-CHIP	100	5%	1/10W
R551	1-216-025-11	RES-CHIP	100	5%	1/10W
R552	1-216-025-11	RES-CHIP	100	5%	1/10W
R555	1-216-121-11	RES-CHIP	1M	5%	1/10W
R556	1-216-025-11	RES-CHIP	100	5%	1/10W
R557	1-216-025-11	RES-CHIP	100	5%	1/10W
R560	1-216-653-11	METAL CHIP	1.2K	0.5%	1/10W
R561	1-216-651-11	METAL CHIP	1K	0.5%	1/10W

Ref. No.	Part No.	Description			Remarks
R562	1-216-073-00	METAL CHIP	10K	5%	1/10W
R563	1-216-073-00	METAL CHIP	10K	5%	1/10W
R577	1-216-081-00	METAL CHIP	22K	5%	1/10W
R578	1-216-081-00	METAL CHIP	22K	5%	1/10W
R579	1-216-073-00	METAL CHIP	10K	5%	1/10W
R580	1-216-073-00	METAL CHIP	10K	5%	1/10W
		< VIBRATOR >			
X501	1-767-510-11	VIBRATOR, CERAMIC 10MHz			
X503	1-767-519-11	VIBRATOR, CRYSTAL 27MHz			
**********					
		MISCELLANEOUS			
		**********			
56	1-765-343-11	WIRE(FLAT TYPE) (23 CORE)			
102	1-693-488-11	TUNER (FM/AM)			
103	1-782-648-11	WIRE (FLAT TYPE) (23 CORE)			
104	1-757-266-11	WIRE (FLAT TYPE) (13 CORE)			
105	1-769-980-11	WIRE (FLAT TYPE) (13 CORE)			
⚠116	1-775-787-41	CORD, POWER			
118	1-690-589-31	WIRE (FLAT TYPE) (13 CORE)			
165	1-452-925-21	MAGNET ASSY			
⚠203	8-820-116-01	OPTICAL PICK-UP KSM-213DCP/Z-NP			
205	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)			
⚠T901	1-435-653-11	TRANSFORMER, POWER			
**********					

Ref. No.	Part No.	Description	Remarks
		ACCESSORIES & PACKING MATERIALS	
		**********	
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P (SP,MY)	
⚠	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#3	7-682-148-01	SCREW +P 3X8	
#4	7-685-871-01	SCREW +BVTT 3X6 (S)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

SS-CRB5/CVB5

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
Australian Model
Chinese Model
SS-CRB5
E Model
SS-CRB5/CVB5

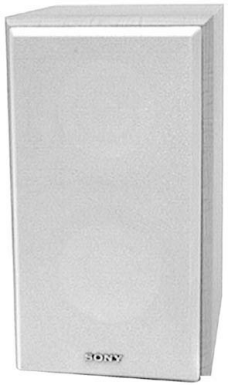


Photo : SS-CRB5

- This set is the speaker system in CMT-RB5/VB5.

SPECIFICATIONS

Speaker system	2-way, bass-reflex type
Speaker units	
Woofer :	10 cm dia., cone type
Tweeter :	5 cm dia., cone type
Nominal impedance	4 ohms
Dimensions (w/h/d)	Approx. 145 × 255 × 210 mm
Mass	Approx. 2.7 kg net per speaker

SPEAKER SYSTEM

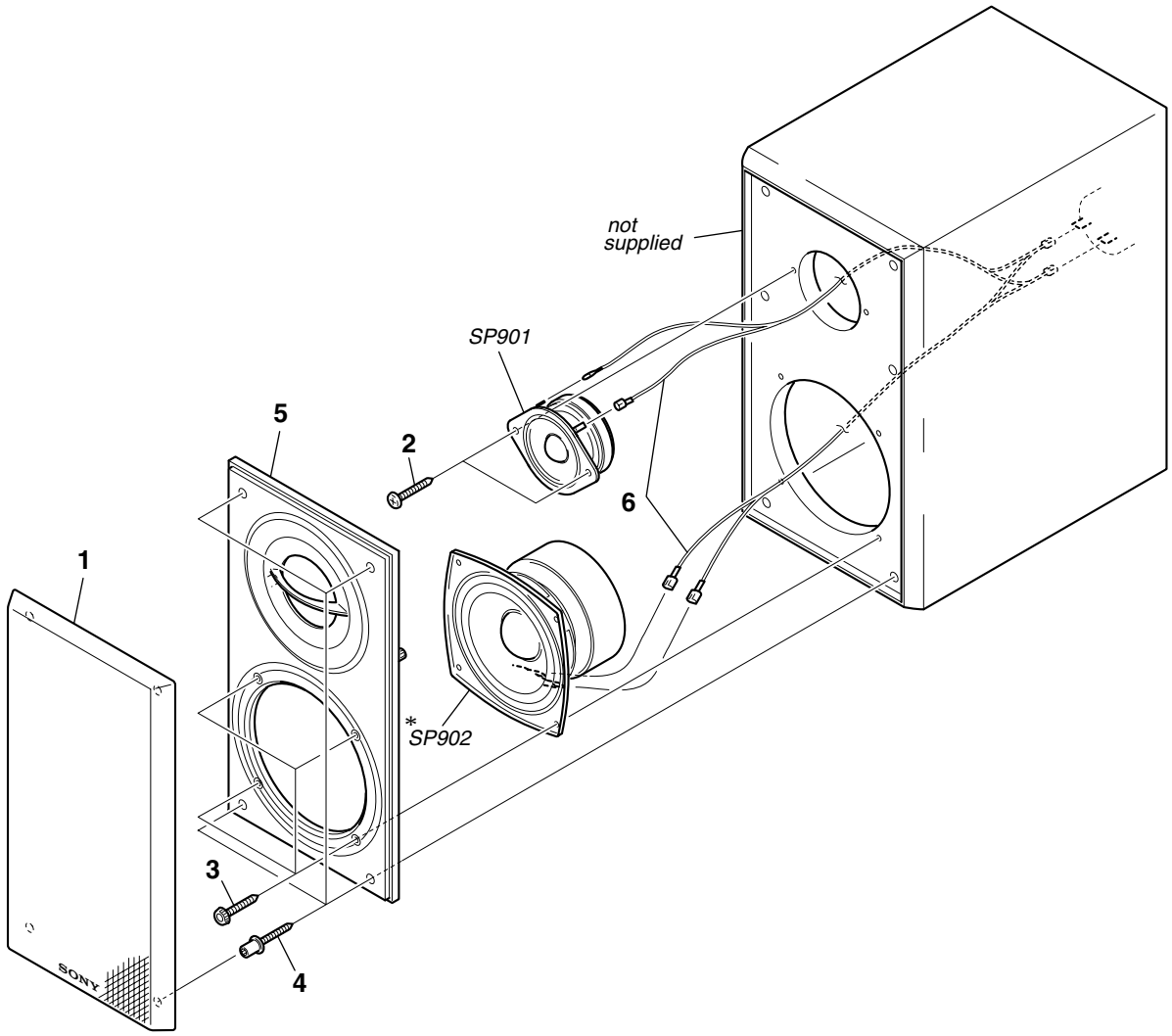
SONY®

EXPLODED VIEW AND PARTS LIST

NOTE:
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay shoud be anticipated when ordering these items.

* : SP902

The model name is printed on the rear side of the speaker.



Ref. No.	Part No.	Description	Remarks
1	X-4953-051-1	FRAME ASSY, GRILLE (CRB5) (LIGHT GRAY)	
1	X-4953-262-1	FRAME ASSY, GRILLE (CVB5) (DARK GRAY)	
2	4-874-614-11	SCREW (4) (3.5X14), TAPPING	
3	4-932-425-01	SCREW (3.5X20)	
4	4-229-774-01	SCREW, ORNAMENTAL	

Ref. No.	Part No.	Description	Remarks
5	X-4953-050-1	PANEL ASSY, FRONT	
6	1-757-017-11	CORD, CONNECTION	
SP901	1-529-801-11	SPEAKER (TWEETER)(5cm)	
SP902	1-529-802-11	SPEAKER (WOOFER)(10cm)(CRB5)	
SP902	1-529-900-11	SPEAKER (WOOFER)(10cm)(CVB5)	

Sony Corporation
Audio Entertainment Group

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